A

TREATISE

WHICH

OBTAINED THE PRIZE

ON THIS QUESTION:

"What are the Symptoms which indicate, or contra-indicate Blood-letting in "Fevers, whether Intermittent or Continued, designated under the "terms, Putrid or Adynamic, Malignant or Ataxic?"

PROPOSED BY

The late Academical Society of Paris,

For the Meeting of 1812.

BY

J. VAN ROTTERDAM,

Clinical Professor of Therapeutics and Materia Medica in the School of Medicine at Ghent, Physician to the Great Hospital of the same City, Member of several Learned Societies, &c.

Medicina igitur, quo hodie colitur ambitu, est scientia ac prudens directio virium naturæ humanæ ad vitæ et sanitatis à morbis et morte tutilam.

Gaubius, introductio ad Pathologiam, de disciplina medic. p. 3.

TRANSLATED FROM THE FRENCH

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TO

WILLIAM HARVEY, M.D. M.R.I.A.

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YOU, Sir, can justly appreciate the difficulty and importance of this question; you have deemed the Treatise worthy your attentive perusal; and, in kindly permitting me here to address you, I am at once enabled to offer, thus, my grateful acknowledgments, and to add respectability to the volume.

With sentiments of the highest respect, allow me to remain,

SIR,

Your faithful, obliged and humble Servant,

J. TAYLOR.

INTRODUCTION

TO THIS

ENGLISH TRANSLATION.

"On doit se garder d'éliminer ce que l'on veut trouver."

BICHÂT had well remarked, that the writings on medicine had rather be curtailed than extended; in introducing to the British Medical Public, an *approved* Treatise, not known in these countries, upon an important question even now agitated, I cannot accuse myself of the latter, whilst, laying no claim to the merits of the former, I may escape animadversion upon either.

Speculative, or conjectural science, is seldom successfully prosecuted, without a certain degree of enthusiasm,

a which

which carries its votaries beyond the direct and immediate object of their labours; this generous excess, is no where less desirable, or more to be dreaded, than in the *practice* of physic, where, to apply the words of a celebrated Politician (*a*), a disposition to *preserve*, with an ability to *improve* the existing materials, would be the proper standard, and where every thing else, is vulgar in the conception—perilous in the execution.

Demonstrative science, is progressively enabled to arrange, class, and recognise its various objects, with a satisfactory degree of correctness. Nature, indeed, appears to have observed throughout, certain harmonious models, not varying essentially in their primitive generic characters; and, although we have also certain models

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(*a*) **Burke, Reflections on the French Revolution,**

of disease, yet the peculiar, and never-ceasing changes of animal and human *Life*, give to those models. such boundless and complicated variety of character, as to place them beyond the reach of all correct classification, or identical recognition. Could remedies be adapted to every shade —to every complication of disease—we might hold up specifics for all: but the limits of human intelligence, are here drawn far short.

Theories and speculations then, founded upon ignorance, for we know nothing of first principles, or, upon shifting and mutable facts, for the circle of human existence affords no other, can never, with any safety, be generally applied, in the medical treatment of individual disease; nor, and for the same reason, can any specific remedy be uniformly employed in any particular malady, though either may perhaps, from a temporary coincidence of circumstances, seem to command, for a

time, remarkable success; yet, to the enthusiastic, or to those who allow themselves to be directed by others, (two classes sufficiently numerous in medicine) this offers an illusory—a dangerous precedent: the extent too, of that danger, will be considerably influenced, by the eclat *belonging*, or *given* to the cures, by the character of the physician, and by the style of his writings.

The medical world have not yet forgot, indeed its vestiges are even still to be traced in some of the bye-paths of medicine, *cocta, non cruda sunt evacuanda*, a precept which, from the celebrity of its author, and the mistakes (*a*) arising out of it, continued, for nearly two thousand years *d'éliminer ce que l'on veut trouver*.

(*a*) The system of close apartments and drawn curtains, or of *cocting* diseases, than which, a more preposterous, unphilosophical, or destructive has seldom originated with mankind.

We may also have reason to remember the effects, when calculated, of *throwing in* bark and wine—of *pouring in* mercury—of *following up* purgatives—of leeching by *relays of dozens*—of *strangling diseases* in their birth—terms and precepts which, however scientific the one—however decisive, when reduced to practice, the other, may convey I imagine, not only extravagant, but wrong ideas, both of the curative process, and of the means of directing it.

We are not to appreciate medical language, or medical precept, from their intended, but from their probable effects, on medical practice, and experience herself may err, yielding to the influence of monoculous principles, or partial precepts.

In whatever way remedies may act—whether applied with a view of reducing inordinate, assisting deficient, or changing disordered forms of life, they are not to be regarded, either as the sole or

primary

primary agents in the removal of disease; the *living* machine must play the important part (*a*); with just and adequate ideas then, of the eminent and acknowledged advantages from their rational and discriminate use, let us rather profit by calm and unprejudiced reference to their therapeutical and medical history, than be led away by enthusiastic or interested stories, of their specific or curative powers; some of the few above alluded to, have nearly had their run, and we now begin, perhaps in their disuse, to contemplate the effects of their abuses. *Cavere autem decet, ne dum unum errorem vitamus, in alium curramus, vix minorem.*

Since mankind became subject to disease, that termed fever, has formed a prominent feature in the catalogue of human suffering; the companion of birth, the as-

(*a*) The vain and giddy fly, perched on the glowing axle, viewed the revolving wheel, and exultingly exclaimed—"What a dust I make!!"

sociate

sociate of health, the satellite of death; modified by all the various circumstances attending *life*, we need not wonder it should, like that, mock definition; its proximate cause, like other first causes, being wisely placed beyond the reach of human intellect, attempts at its investigation have been equally useless and frivolous; concerning its symptoms (*a*) even, Nosologists have not been able to concur in a satisfactory determination, though we readily become, by frequent observation, sufficiently acquainted with its general characters, to know when it is, and when it is not present. Its exciting causes then, its peculiar symptoms, and means of relief, form the proper objects of direct medical pur-

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(*a*) A case occurred to me a few years ago, and which is shortly detailed in the Transactions of the Medico-Chirurgical Society of London, vol. 8, p. 1, page 39, in which I could produce, and remove at pleasure, many of the symptoms of fever.

suit;

suit; the former does not immediately belong to the subject of this Treatise, and the two latter, as far as concerns the question proposed, are treated of in the following pages.

Our author, however, in part second, section second, of this little Work, has suggested, from authorities there quoted, some ideas concerning the influence of argillaceous earth, in producing the exciting causes of paludal fevers, and although I do not concur therein (*a*), nor intend to enter into any theory upon this intricate matter, yet I must take this opportunity of stating a fact, which, in some degree I think, applies here, and which, should it come under the observation of those charged with the health of soldiers, may draw to this matter,

(*a*) The proportion of the constituents of atmospheric air, if we except caloric, are not found to vary, other matters or principles are adventitious.

more

more accurate investigation, and perhaps limit the employment of that species of earth, so extensively used as an article of dress in the British Army: such consideration only, could induce me to intrude upon the public, the relation of a circumstance, in which I was particularly concerned.

The 2nd. Battalion of the 34th. Regiment arrived in the Peninsula in the summer of 1809, upwards, I believe, of a thousand strong, by the beginning of the year 1810, it was reduced, by a fever, to six hundred effective. In the spring of 1810, disease continued to be so prevalent in this battalion, whilst the other regiments composing General Hill's corps, cantooned in Abrantes and its neighbourhood on the Tagus, were in perfect health, that it was in contemplation to send it to the rear, as no longer fit for active duty: this sickly state of a corps, as remarkable for the military spirit of its men, as for the ability and attention of its

its commandant, and the unanimous zeal of its subaltern officers, excited, at once, the surprise and regret of the whole division, and the particular attention of the Military and Medical Staff. It is just to remark here, that the surgeon and senior assistant were both sick, not however of the prevailing disease, and absent from the regiment, and the only medical officer present, was a very young man, lately appointed. Under these circumstances, I was desired to join and take the medical charge of that battalion, and to report upon the *nature* and *cause* of its extraordinary sickly state.

The army was ordered to move next morning upon Portalegre, a march of three days, the whole of the sick were left in Abrantes, and the morning after our arrival in Portalegre, twenty new cases of fever presented themselves. Without attempting to give any *particular name* to the disease, I shall only mention the following general characters,

still

still sufficiently impressed upon my memory, and more or less, constantly remarkable: a pale, shrunk and inanimate countenance; languid, dull eye; loco-motion imperfect, tottering, as if drunk; if asked to feel the pulse, the hand was presented far short, or thrust in my face; the nutural functions little impaired; in some, the pulse was hardly altered, in others fluttering, unequal and not to be counted, in a few cases so much so, as almost to seem inconsistent with the continuance of life.

The regiment was quartered in a convent, some of the cells of which formed the hospital. What was medicine to do here? The next succeeding days, several new cases.

I immediately requested that the battalion might be taken off all duty, and sent to a large village, *Allegrette*, at the foot of the mountain *Aronches*, two leagues distant; this was done, the sick were sent to the rear, and the procession,

on

on that occasion, sufficiently marked the inanimate character of the disease, almost every man requiring an attendant to prevent him tumbling from the mule.

New cases daily presented themselves; the men were quartered loosely over the town, and I had here an opportunity of ascertaining the state of the interior œconomy of the corps; the following circumstances appeared.

The men had been provided with excellent flannel, instead of linen or cotton shirts, which the officers insisted upon being kept white and clean; the flannel, however, soon loses its colour, and the soldiers, to meet the inspection of their officers, dusted, and occasionally wetted their shirts with pipe-clay; this circumstance first became evident to me, from the peculiar feel of the shirt on the man's body. They were also in the constant habit of cleaning their white trowsers with moistened pipe-clay, and this

this is frequently done while in dress; I immediately suggested to the commanding officer, some measures, the objects of which were, the abolition of pipe-clay, —the ablution, with soap and water, of the whole corps—the immediate purchase of linen or cotton shirts, and a daily ration of good wine; these suggestions were immediately put in orders, and were as promptly and fully carried into effect. Not one of the officers had this disease, and I had no reason to think it contagious. During three weeks from this period, there were no cases sent to general hospital, and, at the end of that time, the battalion was fully as healthy, as any equal number of men in the army *(a)*. No deaths occurred with

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(a) It appears from the official returns of the peninsular army, that, from the 21st. of September, 1809, to the 20th. of March, 1810, 1192 cases were admitted on the sick reports of this battalion. In the last mentioned month, there were 113 admissions, a number greater than

with the regiment. The fever was of the continued form, and attended with considerable vascular reaction.

The bases of the marles, of which pipe-clay is a species, when alone, or even in large proportion (19 parts in 20) with other earths, do not support healthy vegetation; pipe-clay, when dried at a heat below that of boiling water, absorbs moisture from the atmosphere, and this property is increased, in pro-

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than that of any other corps in the army, and the only disease remaining with the regiment was fever; in the succeeding month, ending the 20th. of April, during which, the above measures were adopted, there were only 36 admissions, a number nearly the least in the army, in that ending the 20th. of May, there were 35 admissions, a number still among the smallest in the army, and the prevailing disease with the regiment was then venereal. I have not been enabled to make a correct comparative statement of the health of this corps, during those periods, because the official returns did not, at that time, specify the *strength* of regiments.

portion

portion as it is minutely divided (a); when this species of earth is moist, it absorbs oxygen: and, when exposed, in a moist state, to increased temperature, the latter faculty is greatly augmented (b): It most probably increases, though a bad conductor itself, the conducting powers of woollen or other cloths, when ingrained in their texture, thereby impairing or destroying their essential properties, as articles of clothing; it renders them more or less impermeable to the atmosphere, consequently to cuticular excretions.

The phenomena of life, and of disease, are modified by a great number of causes, the most powerful of which escape our senses; I do not presume to assert, or attempt to explain the influence of argillaceous earth on the animal œconomy,

(a) Sir H. Davy, Agricultural Chemistry, p. 154, 158, 159.

(b) pages 53, 54 and 55 of this Memoir.

and

and I shall conclude this digression, already perhaps tedious, with the following queries. Do not these natural qualities of pipe-clay, render it an improper article of dress?—Does not the circumstance I have stated, prove, in a great measure, its deleterious qualities—Is it not, used as an article of dress, conveniently circumstanced for the development of those qualities?—If pipe-clay, used *extensively*, as an article of dress, produces, or sustains the cause of disease, is it, used in a less extensive degree, conducive to health or free from danger?—May it not, when finely diffused in the atmosphere, be carried into the lungs? And, is the British soldier ever perfectly free from its influence; *Nous allons faire sortir des Anglois la poussiere*, was a common exclamation among the French soldiers, in the early part of the Peninsular War.

To return. Amongst the remedies used in fever, the most powerful, the most decisive, and at the same time, with

with respect to its employment, the most undecided, is blood-letting: from the time of Podalirius till the present, this remedy has supported an undulating reputation amongst the first characters in medicine, some of whom, have been induced to change even their own sentiments on its utility. From the evidence thus before us, we may reasonably conclude, that blood-letting has been, under some circumstances, eminently useful, and, that under others, it has been eminently the reverse.

A modern theory appears to identify fever with inflammation, and therefore to treat, and cure it by blood-letting: we may admit the former for a moment, (because ignorance may admit any thing, or nothing) the latter is before its proper tribunal, fact and experience, and we may shortly reply to both by interrogation.—What is inflammation?—Is this beautiful process of life, *qui modo reparat, modo destruit illius compagem,*

always of the same kind, and amenable to the same laws, and method of treatment? In short, are not the exciting and modifying causes of inflammation as various and complicated, and its appropriate remedies as different, as far, at least, as experience teaches, as those of fever? If so, the admission does no more, either in theory or practice, than place us, in what Logicians call, a circle of argument.

Without prying into that attribute of life, by which *reaction* in the system is produced, we may enquire, Is that process of the animal œconomy, *curative*, or *destructive* in fevers? The ancients supposed the former, since they fostered or nursed it to its natural or critical terminations.—The moderns the latter, since they annihilate it in embryo (*a*): its *degree*, its *equability*, and its *kind*, have consi-

(*a*) Is the question admissible? whether exposing fevers in the high ways (*primitive physic*) digesting them in close vessels, (*cocting*) or strangling them in their birth by blood-letting may be most conducive to the *restoration of health*.

derably

derably influenced the question of blood-letting with both.

Appeals have been made to morbid anatomy, to support the idea of previous inflammation as the cause of mischief in fevers: however demonstrative and satisfactory such proofs may be, of the destructive effects of previous inflammatory disease, yet they cannot be held universal, as authorizing the treatment of fevers by blood-letting, for changes may take place, and accumulation or congestion may occur in particular viscera, not at all connected with the cause of death, nor even sometimes with the disease, much less to be cured, or even treated by blood-letting. The organ of sight affords some beautiful illustrations of such changes on a small scale, but far differing from inflammation, either in their causes or appropriate treatment.

Nobody, I believe, doubts the utility of blood-letting in what is termed

phlegmonous or *phlogistic* inflammation; most people do, in anthrax or erythema; should the latter kind of inflammation indeed, depending on what we call *debility*, or *increased sensibility*, or *morbid irritability*, or what not, attack an organ, or organic system, essential to life, so as to threaten its functions we bleed (as much locally however as possible) not because sanguineous evacuation is calculated to remove that state of disease, or to restore health, but because, we must either relieve the organ, or lose its functions, the former, by increasing the general disease, or, what is termed, *changing the diseased action*, or *converting the disease*; the latter, at the expence of life. Changing these diseases, however, at high premiums on the circulating medium, is found to be a delicate kind of traffick, and frequently leaves both parties *reason* for dissatisfaction. This, in fact, is no negative remedy; an agent, dealing, if I may use the expression, in the very

material

material of life, should at least, measure his commodity on the scale of the vital powers. If, in disease, this remedy be indicated, it is indispensable—if not indicated, it is, in all probability, prejudicial—*What then are the symptoms, which indicate, or contra-indicate blood-letting, in fevers?*

This important question, not inapplicable I think, at present, treated and answered by an intelligent physician, inhabiting a country, the almost constant theatre of fevers, to the exclusive approbation of one of the most learned Medical Societies in Europe, cannot be uninteresting to the British Public, to whose candid and enlightened minds, I here offer, with a full sense of the deficiencies of its English dress, the following Treatise, convinced that it contains principles and precepts, well calculated to the rational employment of blood-letting in febrile diseases.

The work, indeed, may have its errors; few medical works can meet the general idea

idea of perfection: the translation may be found confined; it should be considered, however, that the sentiments of an Author are sometimes lost in the fancy of a Translator: the volume is here offered, not as a gauntlet to criticism—not as a dictate to experience—not as a precept to youth, but to the candour of all, as a useful Treatise, upon a question involving some of the most important points in Medical Practice. I might perhaps, venture to recommend it to the attention of the junior ranks of military practitioners, who may have opportunities of seeing disease as it ought to be contemplated, not in the monotonous wards of a fixed hospital—not in the precincts of a city, or the corner of a county, but under the various circumstances and causes, which are observed to influence, not only the forms of disease, but the whole phenomena of the animal œconomy, and of life.

Dublin:* 23, *Nassau Street,
1st. *March,* 1818.

PREFACE OF THE AUTHOR.

WHEN I addressed this little work (*a*) to the Illustrious Medical Society of Paris, I was fully sensible how far it fell short of the eminent utility of its ob-

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(*a*) The question which gave rise to this work, was proposed by the Medico-Academical Society of Paris, in its sitting of the 24th of April, 1810. Fifteen Candidate Dissertations were offered in consequence, and, in an extraordinary sitting of the Society on the 2nd of November, 1812, the prize was proclaimed to this one. It was written originally in the Latin Language, and subsequently published at the request of the Society. In 1816, it was translated into French, and published by the author at Ghent, the translation from which I here offer to the public.

The report, consisting of 47 pages, of M. Bosquillon, President of the Committee, appointed by the Society to examine the Candidate Dissertations, is omitted in this translation; also the history of 32 cases of disease by the author, thus considerably reducing the volume, without very materially lessening its value.

ject,

ject, and how much it still left to be wished, particularly with respect to form and style; I still flattered myself however, and with reason, that my learned judges would excuse some errors overlooked in expediting the work, or owing to the little leisure left me from the cares of teaching and practice; I attempted above all things to interest, not by the charms of composition, not by abstract considerations, trifling offsprings of the fancy, but by an entire veracity, and by some practical views, arising from an experience of twenty-five years, and constantly verified at the bed-side of many thousands of patients, successively confided to my care.

A justly celebrated Society of Physicians, have condescended to honor this Memoir with their approbation, I trust that an enlightened public may shew it the same indulgence, and I sincerely hope it may be useful to them.

The experienced Physician only can appreciate

preciate the extent of the difficulty of this question. In a word, to recognise and determine the true character of a disease, amidst the tumultuous concourse of so many phenomena: to seize and apply with precision the proper remedy, and to measure it always exactly on the scale of the vital powers, the difficulty there is surely by no means inconsiderable; and it is painful to admit, that the progress of the fevers which form the subject of this Memoir, is often so obscure and insidious, that the most able Physician finds himself occasionly constrained to rest upon mere probabilities, and to proceed frequently at hazard in the midst of darkness. It may suffice to quote, for example, the famous Practitioner Stholl, who ingenuously confesses to have mistaken a biliary, for an inflammatory disease, because he had obtained in it, a considerable temporary relief from bleeding.

Even at this day, the theory of fevers in general is so imperfect, that the most ingenious

ingenious hypothesis becomes very nearly useless to the practical physician; I have not therefore adopted any of them in this dissertation, essentially clinical, and I submit to the learned, as bare conjectures, some theoretical opinions contrary to those of certain modern authors justly esteemed. If that be temerity on my part, it does not at least proceed from foolish pride, or from the baneful mania of contradiction, it has its source in the sincere desire, of contributing all in my power, to lighten the load of evils which is heaped upon humanity.

This sentiment, once for all honestly expressed, will place me I hope, beyond the criticism of the ignorant or the envious, whose vanity I have not pretended to wound, and whose temper I have not pretended to ruffle: every man of good sense will easily conceive, that in having composed a Memoir upon a question publicly proposed by a celebrated Society, I did not wish, wantonly to draw upon myself those controversies, those broils which fruitlessly

fruitlessly harrass the polemical writer; my only object has been, to throw some light upon a matter as important as it is difficult; without introducing any prejudice, any personal animosity, any thing in a word, which could afford a subject of complaint to any individual whomsoever.

Then, if the doctrine which I have there set forth be received, if it contributes to improve the treatment of diseases as common as they are fatal, my best wishes shall be accomplished. If, on the contrary, any of my opinions are found erroneous, should any one calmly point out those errors, and oppose them by sound reasoning or by practical experience, I shall gladly, but silently, profit by those new lights, and I here declare, that I will never, directly, or indirectly, answer any writing to which the present Memoir may give rise.

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PART I.

Of Blood-letting in Fevers in general.

PREVIOUS to determining upon the symptoms which indicate or contra-indicate blood-letting in intermittent, putrid and malignant fevers, it is necessary to take into consideration all the circumstances which, in acute fevers, can influence the employment of this remedy, because none of those symptoms can of itself, circumstances abstractedly considered, furnish a sufficient and absolute indication. Such is the object of this first part, indispensible in comprehending the others, although apparently not so directly connected with the question proposed. I venture to hope besides, that it may be useful to young practitioners who, in some diseases, the forms of which are infinitely varied, are but too much exposed to mistake, and to decide for or against so powerful a remedy unseasonably, and not without danger to the patient.

SECTION FIRST.

General indications of Blood-letting.—Detail of the Symptoms.

According to all Authors, as well ancient as modern, blood-letting is instituted for one or other of these four reasons.—

1st. When the blood is carried in greater quantity, and by an irregular impulse, upon any essential part.

2nd. When there exists in any of those parts an increased incitement, an increased irritation, or, as Gaubius expresses himself, *a crispation of the fibres or any spasmodic affection* in the arterial vessels, which might produce a greater or less degree of injury, and at length a disorganization of the part.

3rd. When the subject is young and robust, and when, in consequence of pre-existent plethora, from whatever cause, the sanguiferous system is surcharged with a mass of fluid, preventing the free circulation of the febrile impulse.

4th. When the general reaction of the arterial system is too strong to admit of a salutary critical change.

These four states constantly furnish the four following indications.—

1st. To divert the increased impulse of blood from the essential part.

2nd. To relax the contraction, (*crispation*) and to allay the spasmodic action;

3rd. To diminish the mass of blood;

4th. To reduce the inordinate reaction of the sanguiferous system.

Every one knows how much bleeding fulfils these several indications; but the business is above all things, to discern well the symptoms which denote a too great reaction in the system, or particular determination towards an essential organ; I proceed to their enumera-

 tion

tion, begging indulgence of the reader for some prolixity and digressions, into which the importance of the subject and the desire of being more useful, may induce me.

The indications of too great general reaction of the sanguiferous system, are principally taken from the state of the pulse, and from the temperature of the body.

The accelerated, frequent, strong, unequal and hard pulse, denotes augmentation of the vital powers, and, *ceteris paribus*, the more it is strong and hard, the more it demands bleeding; on the contrary, the pulsations frequent, feeble, unequal or intermittent as symptoms of general debility, imperiously forbid the employment of this remedy, nevertheless, and this is a very important remark, these symptoms cannot serve as guides in a state of very great plethora, nor in extensive inflammation of a very sensible membranous part, for in these cases, the apparent debility of the pulse, which gains strength with the bleeding, indicates oppression, and by no means diminution, of the vital powers.

The well marked pulse (*bien dèveloppè*) as

shewing

shewing a strong and prompt contraction of the heart, points out much more the necessity of blood-letting, than the simply hard pulse, which, proceeding from an increased reaction of the artery itself, evinces rather a spasmodic affection, or some obstacle to the circulation.

Then, to judge properly from the pulse, it is necessary that the physician should have studied the natural differences of it, and the various circumstances by which it is modified, it is thus that the puny frequency which is particularly referrible to irritation, varies infinitely according to age, sex, temperament, climate, &c. In middle aged people for instance, a pulse at 90 in the minute announces fever; if it rises to 120 it indicates the greatest danger, and if it remains so for two or three days, it is generally all over with the patient; however, it would be a gross mistake to make a similar prognostic from the same frequency in an infant or a delicate girl.

I think I may introduce here, not unaptly, some considerations drawn from the celebrated Stholl, and which I have frequently been in the habit of repeating to my pupils, for the purpose of warning them against the natural and accidental

accidental variations of the pulse, and of strongly inculcating upon them the uncertainty of this sign, if at the same time all the other symptoms are not attended to.

1st. The pulse varies not only according to age, sex, temperament, &c. but it is quite different in bed, sitting or standing up, asleep or awake, meditating or jovial; different again in the man devoured with cares and sorrows, it changes in fact with the same facility as our affections, so that we must admit it as a rule of practice, never to form an indication from the stroke of the pulse alone; neither, and for the same reason, should the physician ever consult the pulse immediately on visiting his patient, because, very frequently, the shock of seeing him, is sufficient to alter, in the sick person, the impulse of the circulation.

2nd. It is in infancy above all that the pulse is the most illusory, all is nerve as it were, in that age; the least impression produces, at that period, such irregular movement, such singular variations in the play of the arteries, that it is impossible to deduce from thence, any knowledge of the disease.

3rd. In

3rd. In old people, enjoying in other respects the best health, the pulse is often very unequal, as well in force as in frequency: this irregularity, independent of other untoward symptoms, should not at all alarm the physician.

4th. When an organ is secondarily affected, in whatever species of fever, it is necessary rather to pay attention to the functions of the organ than to the stroke of the pulse; which in this kind of case presents such irregularities, that the prudent physician should never decide from it; What for instance does the pulse denote in affections of the lungs? Does not the state of the respiration there furnish data much more certain? Variations of the pulse too are observed in affections of the absorbent system (*dans les affections lymphatiques*) which arise from derangement of the gastric organs.

In fact, neither frequency nor acceleration of the pulse, prove of themselves, the existence of fever, which need not on that account be present, unless those symptoms are attended by lesion of one or other of the functions.

Increased heat of the body, ascertained by the thermometer, indicates in part, the inflammatory

matory diathesis, and if that heat is accompanied by redness of the skin, thence arises a stronger indication of too great arterial action. "A high fever," says Celsus, "in which the skin "is red and the veins turgid, requires bleed-"ing." As heat however, may also arise from a general spasmodic affection, or from a putrido-inflammatory irritation, I must refer the reader to the article *Heat*, part 3, section 3.

Having given the symptoms of too strong general arterial reaction, I proceed to those of particular determinations of blood (*movement sanguin exalté, &c.*) towards the vital parts.

In the first place, the symptoms which shew a particular determination (*determination*) (*a*) of blood to the head, and which most frequently

(*a*) The words *mouvement sanguin, l'irruption du sang,* and *l'engorgement* in the preceding, and two succeeding sentences, I have rendered by the English word *determination,* for, although the Author has employed different terms in the sentences alluded to, I think it is evident from their tenor, that he means what this, as well as the English words *determination of blood,* implies, viz. *an increased action of the vessels of a part, attended with an accumulation of fluids therein.* His words, *irruption du sang dans les poumons,* would perhaps be more literally translated by the English

quently demand bleeding, are, throbbing of the carotid and temporal arteries; turgescence, redness, and frequently a purplish colour of the face; respiration more or less confined; the eyes shining, suffused, and very sensible to the light; head-ach, watching and delirium.

A determination (*l'irruption du sang*) of blood to the lungs is known by a constant sensation of anxiety in the chest; the respiration is difficult and laborious, the inspiration deep, (*profonde*) a fixed or shifting pain is felt in some part of the thorax; the patient is troubled with cough, and cannot endure the horizontal posture, the face is swollen and of a leaden colour.

In determinations (*l'engorgement*) of blood to the viscera of the abdomen, we observe tension of the hypochondria, and a pain over the whole belly; the patient lies down with difficulty, but without the other symptoms of an affection of the lungs; he feels anxiety at the precordium, and he is sometimes troubled with nausea and vomiting.

English words *effusion*, or *extravasation of blood in the lungs*, but I conceive that I should thus be doing my Author an injustice, because he does not mention the pathognomonic symptom of that disease.

SECTION

SECTION SECOND.

General Symptoms and Considerations which forbid Blood-letting.

Among the circumstances which forbid the employment of this remedy, the most prominent indisputably is, diminution of the strength. Lassitude, indolence, languor of the eyes, paleness of the countenance, trembling of the lower jaw and of the hands, tinkling in the ears, deafness, diminution or blunting of the sensorial functions, sadness and depression of the spirits, vertigo, low delirum, &c. sufficiently point out prostration of the animal powers, and the more of these symptoms are met with together, the more is blood-letting to be avoided.

Weakness of the circulating system is recognised by a pulse, little, obscure, feeble, and yielding easily to the impression of the finger; the respiration is frequent and hurried, sometimes noisy and as if choaking, the voice tremulous; the extremeties, ears and nose cold; the features shrunk and disfigured.

Finally

Finally, when the patient is affected with loathing, nausea and vomiting; when he is seized with incontinence of urine and fæces, or when the evacuation of these matters is suppressed, there is no doubt that the natural functions are weakened, and consequently form a contra-indication to bleeding.

However, whatever symptoms the prudent physician finds, whether of augmentation or diminution of the vital action, he will never omit to search for causes even remote from the disease, before he decides for or against this powerful remedy: the necessity of this search becomes evident in all cases where the cause of the disease is of a debilitating nature: let us take for example, the putrid synochus; although that fever, at its commencement, shews all the symptoms of a general augmentation of the vital powers, and the patient may be young and robust, notwithstanding, as the remote cause frequently consists in contagion of a sedative nature, we see the patient fall suddenly into a state of debility; it is besides well to remark here, that of all the recoveries from fever, that from this is the slowest, which proves how decidedly it attacks the vital principle, and how sparingly we should deal with the

patient's

patient's blood, a measure which I shall treat of more at length in a subsequent part of this memoir.

There are still some circumstances which we must not lose sight of, among them are the season, and the temperature of the air, "I do not "at all deny," says Sydenham, "that there may "be diseases of every hour, but there doubtless "are some which observe the seasons as regular-"ly as certain birds or certain plants." It is ascertained by observation, that in winter and beginning of spring, the irritable solid enjoys the greatest degree of energy, the stomach at that time, as Hipprocrates remarks, is warmer, it digests and concocts the aliments better; thence results an overplus of tone in the system, and a tendency to the inflammatory diathesis, therefore in all kinds of fever it is, that at this season, bleeding is of the most general utility; towards the approach, and in the course of the summer, the heat expands the fluids at the same time that it relaxes the solids, but as this last effect particularly takes place later, from thence arises the *plethora of volume*, as Gaubius calls it, which still demands bleeding. During the autumn, the solids being greatly relaxed, imprudent bleeding still increases the relaxation,

tion, and might suddenly reduce the strength of the patient; besides, the symptoms which we observe at that season, proceed for the most part from atony, and disorders of the *primæ viæ*, which should render the indication of bleeding during that period less frequent.

For the same reason, the utility of evacuation varies according to climate and soil; it is known that contagious diseases are propagated much less in cold, than in warm climates, although in the former the phlogistic diathesis is most frequently met with; *cæteris paribus* then, the Spaniards, the Portuguese and the Africans should be more sparingly bled than the English, the Belgians, the Septentrional French or Germans; what we have said of warm climates applies itself to damp countries, and it is this which induces us to use the lancet very cautiously in the swamps (*poldres* (*a*) *Marècageux*) of Belgium.

With respect to the consideration of age as it relates to bleeding, I think I should adhere

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(*a*) *Poldres* is a Flemish word, and signifies literally, the hollow ground between canals.

to the precepts of Waller, of Gaubius, of Boerhaave and of Cullen. According to these great observers, the former and the latter periods of life equally forbid blood-letting. This however does not imply, that in particular cases, for instance, in small pox, difficult dentition, convulsions, &c. it may not be indicated in children, and also in certain aged people, who, living full and taking little exercise, accumulate blood beyond the equilibrium, and thus experience, in acute diseases, the same affections as young people.

In general, during childhood, the arterial system is more relaxed (*a*) *(relachè)* and ample than the venous system (1); the solids, yet feeble, afford little stability, but a great deal of sensibility and irritability: thence, we see the strength yield easily to loss of blood, and if in some urgent cases it may be necessary to have recourse to it, it must at least be very moderately.

Towards the approach of puberty, the increased tone of the solids bears those evacua-

(1) *Voyez* Patholog. De Gregory.

(*a*) *Active* would perhaps be a more correct term and come nearer the truth, vide Lib. citat. p. 142.

tions

tions better, and, as in youth, animal food of more stimulating and nutritive quality is made use of, there results from thence a stronger disposition to inflammatory diseases.

From the 25th. to the 35th. year, man is in his highest vigour, (1) and from this last period to that of 50 years, the solids have still lost nothing of their strength; but beyond this age, the energy of the body gradually wastes, old age creeps slowly upon the members, and bleeding is now so hurtful, that nothing more accelerates decrepitude: from thence it follows, that except the age of manhood, none but the robust youth and the vigorous old man, as Celsus long since remarked, can well support blood-letting.

Equal attention should be paid to the constitution of the patient; in thin, delicate and high complexioned subjects, the blood is proportionally more abundant, whilst in full and bloated people there is more bulk of flesh and fat, the latter also have more slender blood-vessels, and the circulation of the fluids is carried on more slowly than in those who have a well

(1) Cullen De Podagra.

marked

marked muscular system; this is the reason why thin people bear bleeding better than fat, I mean those who are constitutionally thin, and by no means those who are so in consequence of disease, upon the same principle we take less blood from the citizen than from the inhabitant of the country.

A morbid state of the constitution demands equal consideration; cachectic subjects, according to Tissot, are rarely subject to phlegmasia, and have a stronger disposition to a putrid degeneracy, we will therefore be as scrupulous in bleeding them as we would be with scorbutic, scrophulous or venereal subjects, who, according to the same Author, are as rarely the subjects of true inflammation.

There is nothing concerning the idiosyncracy and habits of the patient which does not merit consideration; we find some people, all of whose diseases partake of phlegmasia; thus we see them, if attacked with catarrh, having an inflammatory cynanche; this particular tendency disappears as they advance in age; but as long as any traces of it remain, we would bleed such a patient less scrupulously during his acute diseases.

With

With respect to the habit of bleeding frequently, Gaubius remarks as follows, "The "habit of evacuation by blood, whether spon- "taneous or artificial, always rendering more "easy the reparation of the loss, gives at the "same time a greater degree of irritability to "the sanguiferous system, so as to render it "surcharged by a quantity of blood, which "it otherwise could have easily borne." For this reason we must always consider such persons in a state of plethora, and in doubtful cases of fever, as supporting blood-letting better than others.

The nature of the epidemic is a circumstance concerning which I must insist upon a little. Cœlius Aurelianus tells us, that in a pleurisy which prevailed at Rome, all those who were blooded, were rendered worse from it; whilst in the same disease, bleeding succeeded very well at Paros, and on the shores of the Hellespont (1).

The fact reported by the celebrated Lancisi merits every attention from the practitioner;

(1) Cœlii Aureliani acut. morb. 4 ij. c. xxij.

"There

" There appeared at that time," says he, "some " malignant pleurisies so destructive, that we " had theretofore had nothing similar during " the whole course of the epidemic; and the " nature of the malady having changed all at " once, blood-letting, which in the beginning " had saved so many patients, was unfortu- " nately the cause of death in many others." (1) Similar observations have been made not only in continued, but sometimes even in intermittent fevers.

"It frequently occurred," says Ramazzini, (2) " on account of the particular character of the " disease, that when on the day of the inter- " mission of tertian fevers, we had let blood, " the paroxysm returned that very day, and " from a simple tertian as it was, the fever " became a double tertian." In his description of the epidemic of Modena he still remarks: " In those fevers, bleeding was not of the least " advantage; on the contrary, in the cases in " which it was repeated, it quite reduced the " strength, and the fevers being prolonged, " ended in death, or cachexia; and yet the

(1) Hist. Rom. Epidem. cap. vi.
(2) Eph. Nat. cur. d. 11. an. 9. app. p. 22.

" symptoms generally recognised as indicating " bleeding, such as head-ach, vertigo, deafness " and delirium had appeared."

Hoffman (1) has also given us the history of an epidemic fever which raged in 1720, and in which blood-letting proved fatal to many; he reports two cases wherein it had been put in practice, and in which the patients were carried off in the very next paroxysm.

Having carefully studied the account of that epidemic, I am persuaded that it partook very much of the nature of putrid fever. It is constantly observed that epidemical diseases almost always change with the revolution of the seasons: if an epidemic appears in spring, or at the beginning of summer, with an inflammatory character, the same epidemic will assume, towards the autumn, the gastric or putrid complication. In fact, the dysentery, which raged in the beginning of last summer (1810) in many districts of Flanders, particularly in the country, and which, under the form of an intestinal catarrh, principally attacked the strongest

(1) Cons. et resp. med. cent. 2, et 3 cas. 200.

labourers, was at first treated successfully by bleeding; but when the epidemic had reached the autumn, it assumed the gastrico-putrido-contagious character, and almost every one of those treated on the former plan fell victims to it; I may then conclude, with respect to the epidemic described by Lancisi, that it was for the same reason that blood-letting, which had been so useful at the commencement, became so fatal at the change of the season.

For the purpose of preventing errors so disastrous, and of throwing some light on the evidence by which this change of character in epidemics may be discovered, I shall remark, that such epidemic, whether of the race of putrid fever, of dysentery, or whatever else, has its certain phenomena, appertaining to its primitive epidemical character, which it preserves more or less throughout; but moreover, that it developes at the same time some pathognomonic symptoms, arising out of the change of season; for this supervening cause changing entirely the proximate cause of the disease, this last, then, presents new symptoms infinitely varied, according to the varied complications which have produced them; and their effects will not be properly discovered, but by the very attentive

tive physician, who shall compare and deduce them from principles, with intelligence and sagacity.

Sydenham well knew the difficulty of this important point, when he said, "It is very cer- "tain that he who has diligently observed and "studied the natural phenomena of diseases, "will adopt from thence, with greater cor "rectness, the true indications of cure; I "have therefore entirely devoted myself to "this plan, well persuaded that, as long as I "hold nature my guide, I shall not go far out "of the right road." (1)

SECTION THIRD.

Of the quantity, repetition and period of Blood-letting in Fevers in general.

WHAT we have said in the preceding section, may have sufficiently shewn that we cannot exactly determine upon the quantity of blood to be drawn, and that it must vary greatly, according

(1) Op. univ. epist. dedic.

to

to existing circumstances. I find however that in general, blood-letting is not practised so frequently, nor to such an extent at present as formerly; Sydenham, for instance, prescribed as an ordinary bleeding in violent acute rheumatism, forty ounces, and surely such a quantity would appear now-a-days too exorbitant; he himself even, more advanced in years and in experience, afterwards adopted a better method: and Cullen has since declared twenty ounces a sufficiently copious bleeding. Perhaps the habit of the day, good living, indolence, abuse in venery, &c. may have too much enervated the people of the present age, particularly in cities, to admit of the enormous evacuations borne by our ancestors.

Previous to determining upon a second bleeding, the physician will have attentively studied and recognised the character of the disease, and then examined with equal care, the state of the strength after the first evacuation. I say that he should have studied the character of the disease, for it is necessary that he should act very differently, for instance, in putrid, malignant or intermittent fevers, and in inflammatory fevers, where it occurs that the patient, fallen into a fainting fit on the

first

first bleeding, though very sparing, afterwards bears very well more copious evacuations.

I lay it down then as a maxim, that if the disease is complicated; if, after the symptoms hitherto mentioned, it appears to partake of the inflammatory nature; if the patient has been relieved by the former bleeding; if the pulse remains good; if the symptoms of reaction or impetuous motion towards an important organ diminish, and yet that the symptoms which determined the first bleeding still persist to a certain degree, we may proceed to a second, but always with greater circumspection.

If, on the contrary, the pulse becomes weak, if the strength sinks, we never ought to repeat the bleeding; and in all cases of the fevers before mentioned, it is proper that the physician should consult the pulse even during the flow of blood, for the purpose of instantly assuring himself of its indication; for, if it becomes feeble and irregular, and the patient at the same time more afflicted, it is necessary immediately to stop the blood, because such symptoms hardly ever admit of abundant evacuations: I have a hundred times observed, that by a too copious depletion, the action which appeared exorbitant

exorbitant has sunk suddenly, and that the disease, from acute as it was, passed into the chronic state. Let the young practitioner then never lose sight of this principle, *that in many acute diseases, the healing art consists much more in a prudent observation of the progress of nature, and of her salutary powers*, (forces réactives) *than in a useless and dangerous prodigality of medicines;* for in every kind of acute fever, nature has need of a certain degree of reaction, as well as of a certain interval of time to change or surmount the proximate cause of the disease, and that reaction, if well directed, is often, alone, equal to the cure. In these cases the physician may, and ought to confine himself to observation; but, by no means so, if the reaction is deficient, for, such febrile affections, as Stholl judiciously observes, are never cured by their own efforts, (*leurs propres forces*). Nor yet should he so confine himself if nature departs from the salutary line, or if, which happens much more frequently, some morbid irritation, primary or secondary, or a morbid predisposition of some organs, disturbs her in her operations, and gives to her efforts a contrary and pernicious direction: it is then that she should never be abandoned to herself, and that she claims imperiously the assist-

ance of Art. To this purpose Friend (1) makes the following reflection, "Hippocrates," says he, "gives us the history of forty-two "persons attacked by acute fevers: twenty-five "of whom died; none of those who survived "it, were restored to health but by the means "of some evacuation: which teaches us in what "way nature opposes this sort of disease, and "what line the wise physician should hold, "who always conducts himself upon these "salutary indications."

I have also said that, previous to repeating the bleeding, it is necessary to calculate the strength which remains after the first evacuation. Among the other symptoms which it is important to observe, it may be asked whether the crust termed inflammatory, can be of itself a sufficient reason for repeating the operation, and how far we can depend upon this sign: if we will rest our judgment on this appearance alone, we shall be very often led into error, because it is subject to variation from a thousand divers circumstances. Thus, to cite some of the principal of them, during the severity of winter we frequently ob-

(1) De Febr. Comm. 1. pag. 94.

serve

serve this crust on blood taken from a healthy man; that we meet with it in pregnant women, otherwise in perfect health; that the crust is more or less considerable according as the orifice in the vein is larger or smaller; that we find it in proportion to the periods which the blood has in coagulating (*q' on la trouve en raison du temps que le sang met à se coaguler)* so that we shall not have it at all if the blood falls drop by drop; the form of the vessel too into which the blood is received, greatly influences this concretion; if the vessel be narrow and deep, it will be longer in forming; the crassamentum will be more dense, firmer, and consequently the quantity of serum will appear greater; in this case the sides of the crassamentum will be elevated, and the crust by its contraction will thence assume the form of a cup; it will be the contrary in a wide recipient; the coat (*couenne*) equally extended over the whole surface, will hardly be distinguished from the serum without tearing the mass. Thus it is again that the agitation of blood newly drawn, otherwise under whatever circumstances, always interrupts the process of concretion; the quieter it is, the sooner the crust is developed, because the plastic effort being less prompt, and the red globules more perfectly precipitating themselves,

selves, the gluten will seperate more easily from the other constituent parts, and will shew the coat more readily.

Besides, as a passing remark, it is very doubtful whether, in the phlogistic diathesis, the blood may be as the ancients supposed it, of a thicker consistence; on the contrary, it appears thinner, and it is perhaps this greater fluidity which occasions the inflammatory crust. I imagine that, from this explanation, it may readily be conceived how much the changes in the temperature and weight of the atmosphere must influence this phenomenon, and how little the sole observation of a symptom so changeable should influence us in the employment of a powerful remedy. But although so many circumstances may invalidate this indication, I think however, it should not be altogether neglected, since in general it is observed so frequently and uniformly, in cases where the disease partakes much of the inflammatory character, and where excess of the stimulating powers hastens the torrent of the circulation: if then, the crust is found connected with other symptoms of phlegmasia, if the former bleeding has afforded marked relief, then it certainly confirms the

existence

existence of a too strong action, and decides us to repeat the *depletion*.

Before I dismiss this subject I would add a word on the colour which this concretion sometimes presents in putrid fevers. In examining attentively the crust of the blood drawn during the course of these fevers, I have often found with it a particular well marked appearance, as well in consistence as colour. I have seen it formed by a delicate and bluish membrane, which covered a greenish gelatinous matter; the crassamentum was livid, floating in a serosity likewise thick and greenish. When these appearances are observed on the first bleeding, a second must be shunned as the greatest evil This was the bastard crust of the antients, and perhaps Sydenham was not aware of the distinction, when he thought it the same in the plague and in the pleurisy, and when he pretended to cure the former by copious and repeated bleeding. "In the plague," says he, "the colour of the crust which covers the blood "taken from a vein, resembles that found in "pleurisy and in rheumatism." (1)

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(1) Sydenham, de peste

It may be asked, Does not this phenomenon perhaps prove that there exists something inflammatory in putrid fevers, particularly when observed during the first period of the disease, the fourth and fifth day, and when, at the same time, we remark other symptoms of inflammation, such as heat, redness, hard pulse, &c. and when a determination of blood towards a vital organ, the head, the thorax or abdomen, appears to confirm this supposition. I shall at once answer, that these symptoms never present themselves at the commencement of fevers truly putrid or contagious, and that if in the course of the disease, the fourth or fifth day, when the hot period is well marked, there occurs any thing like it, that should by no means surprise us, if we would consider, that robust and athletic people of a sanguine temperament, are attacked with it as well as those of an opposite condition; that in them the local predisposition or irritation of some organ, may thither induce the whole force of the morbific action, and that, by the subsequent spastic (*spastique*) affection of that part, there may arise there, as we observe it in erysipelas, an inflammatory affection, which is much less an inflammation properly so called, than a species of phlogosis,

which

which from its nature demands much more rarely the use of the lancet.

It is to these cases of putrid fever, in their simple state, and partaking little or nothing of the inflammatory character, that the following observation of Stholl (1) is applicable. "In "those bilious putrid diseases," says he, "we very "frequently find on dissection, some organ or "other seized with gangrene; but can we from "thence infer that such part was the seat of "true inflammation? It is certain that such "gangrene was owing to the preceding putrid "diathesis, together with a puny disposition, "which has rather the mark than the true "character of inflammation."

Besides, the real nature of inflammation is not yet so well known as some Pathologists imagine. Although its proximate cause appears to consist partly in increased irritability of the part affected, however, this increased irritability is not always connected with what we call the inflammatory diathesis; on the contrary, it is proved by facts, that sometimes this

(1) Ratio Medend. T. 4: p. 276.

irritability

irritability, as well as sensibility, is increased in proportion to the debility. Morgagni describes inflammation of several organs in weakly and pining subjects, where the affected parts displayed the whole train of phenomena peculiar to real inflammation. (See, for example, Epist. Med. XXX, No. 17, et Epist. XXXVI, No. 11 et 13), we may find also in this Author (Ip. XXXVIII, No. 18,) an account of a violent inflammation of the lungs, with universal dropsy. From this we may conceive why and when tonics, particularly camphor, have been of use in symptomatic inflammation, where, from morbid sensibility and subsequent increased irritability, the determination of blood upon an organ, together with the spasm of the extreme vessels have caused inflammation. Of the same nature again, are the partial inflammations which we observe during the course of nervous, ataxic and malignant fevers.

If then, in fevers of this kind, a too strong action convinces me of the necessity of a *depletion*, I never proceed to it but with the greatest circumspection, and preferring almost always, topical to general bleedings. It is otherwise in the inflammatory putrid fevers, in the early periods of which the symptoms of in-

creased

creased action are more evident; there the extraction of blood may be judged generally necessary, and the precepts concerning the inspection of the inflammatory coat, there find their full application.

There yet remains a point for elucidation, it is that respecting the period of the acute disease, and the precise moment at which it is proper to perform the operation, when, from the nature of the disease, it is judged necessary.

The question, whether bleeding should be at all practised after the fourth day, has ever appeared important; the negative so prevailed among the antients, that after that period they did not dare to adopt it, except in the most extraordinary urgent cases, as in that of the *Anixion* of some epidemics of Hippocrates, and in some other rare cases which Galen quotes, to justify a bleeding which he was induced to administer the twentieth day of the disease. This rule might in reality be admitted in acute diseases of a decidedly inflammatory character, because they proceed rapidly to their achme, rarely exceed the term of nine or ten days, and it is at their invasion particularly

that

that the increased action being in its greatest violence, bleeding is more strongly indicated; but it is otherwise in putrid, ataxic, and intermittent fevers, which, in their uncertain progress, almost always present signs of debility, even before the symptoms which demand bleeding begin to develope themselves.

In those fevers of the nervous kind, but whose character still appears dubious, we generally find some vague, light horripilations, interrupted by some fits of passing heat, a certain frequency of pulse, lassitude, an increased heat of the body, with a febrile exacerbation towards evening; and this state continues, in general, for several days, before the reaction is properly developed. As long as this period lasts, bleeding is surely by no means indicated on any day, even should the patient be of a robust constitution: it will be much safer to rest a simple spectator, until an absolute reaction, although perhaps dangerous in degree, may demand depletion; for these vague symptoms announce a tedious disease, as well as a nervous fever; now if we bleed here before the fourth day, the vital powers will remain enfeebled during the whole course of the disease, and the cure will be as difficult as uncertain.

In

In the putrid synochus, on the contrary, it is the first period which must be seized, because that fever, developing itself more promptly than the mixed nervous fever, shews from the beginning, an increase of the vital powers. It is for this reason, that, if the constitution of the patient, if a particular determination to a vital organ, if, in fact, any of the circumstances already cited, or of those hereafter to be mentioned, render bleeding a necessary indication, we should carry it into execution, as soon as the period of reaction shall be perfectly established.

But if the application of such a remedy, in those kinds of fever, requires prudence, it does so particularly in the *putrid hospital synochus*. There, we may suppose an inflammatory state, if we judge from appearances, and if we do not pay unceasing attention to the particular character of the disease; but if we study attentively the nature of the hospital fever, we shall be persuaded, that, although at its commencement, it may exhibit something inflammatory, as in the other species of synochus, a bleeding, imprudently adopted, will produce a total sinking of the strength, which will not be limited but by death.

We

We shall hereafter see, that most of the intermittent fevers, even from their nature, contra-indicate bleeding, and cannot admit of it except under some complications. With respect to the period of performing it, it is only in some extremely rare cases that we would direct it, as some have proposed, during the hot stage; but if this operation be judged useful, we should perform it during the apyrexia, at least if some serious accident happening an essential organ during the paroxysm, does not imperiously demand it. The physician, then, ought here to direct his attention much more to the particular phenomena, than to the period of access.

Practitioners are still divided concerning the exact period of apyrexia at which we are to bleed;—Is it immediately after, or before the paroxysm, or, at the moment of attack?

Pringle, Coling, Morton, Senac, &c. do not approve of bleeding at the beginning of the fit. On the other hand, see what Trnka (1) says upon it. "Let us attend to our teacher, Experience. A certain empiric, according to Rive-

(1) Lib. de fibrib intermit. p. 2, page 336.

"rius, cured a great number of tertian fevers "by only giving a slight purgative, and after- "wards, at the very moment of attack, letting "blood; the paroxysm was arrested, feebly "developed itself, and never returned more." Priens, in his Treatise on Fevers, also recommends blooding at the period of attack. Raygerus says, (2) "I am convinced with Priens, "that bleeding is excellent at the commence- "ment of the paroxysm." And elsewhere (3) "I have," says he, "very often administered "bleeding in the hour, in the very instant "which immediately precedes the paroxysm, "and with the greatest success." Peter Rommelius (4) relates a case of tertian fever cured by scarifications during the fit; however, it appears that this Author speaks here of a particular case, since he adds towards the end of the observation: "During three years that tertian "fevers raged greatly, many physicians, for "what purpose I know not, bled from the "median vein on the approach of the parox- "ysm, but as far as I could learn, without the

(2) Scholl ad Spindleri, observ. 35.
(6) In notis ad M. Rulandi thes. medec. lit. febri tutian.
(4) Ephem. nat. curios decem. ii. an. 6, Obs. 228. p. 478.

"least

" least success, and to the great detriment of " the strength and health of the patients."

This observation still serves to prove that it is always necessary, as we have above remarked, to pay attention, before bleeding, to the nature of the epidemic, and that, as well in intermittent as in other fevers.

Some further remarks on this subject may be found in the following part.

PART II.

PART II.

Of Blood-letting in Intermittent Fevers.

SECTION FIRST.

Division of these Fevers according to their causes.

THE point in medicine, upon which we observe the greatest incertitude and doubt amongst writers, and which has shared the most diametrical opinions, is that concerning the nature and peculiar character of fevers, more particularly intermittent fevers. Some have attempted to explain them upon theory alone, and have contributed nothing to medicine; others, reversing every thing, have made divisions *ad infinitum;* others again, have occupied themselves in giving fevers new names, which they fancied better adapted either to their more characteristic symptoms, or to the various organized parts

parts which they more especially affected; however, all those modern writers have scarcely taught us any thing of the real nature of intermittent fevers, inasmuch as they depend, most frequently, upon certain causes very different from those which give rise to continued fevers.

We may here remark with Gaubius: "They "differ only in representation, not in the "matter of fact: as long as we can form no "clear ideas on the subject, there is no reason "for changing the names adopted by the "antients." I must however, exclude from this number the illustrious Pinel; his nomenclature of fevers has thrown much light upon this subject, in designating, by the name itself, of each genus, and of each species, the organic system which is the primitive seat of the affection. However, to know any thing certain of the nature of fevers, intermittent particularly, I believe it would be necessary to look for it, in the study of the predisposing and occasional causes, as well as in that of the various affections of the organic systems.

The practical utility of this study, appears directly in this, that the principal distinction

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of fevers is taken, in theory, from the nature of the causes, even remote; and, that without the previous knowledge of the exciting causes, it is as impossible to form a proper indication in intermittent, as in continued fevers; which we will hereafter clearly demonstrate.

Let us admit, with the celebrated Cullen, that the exciting causes of every species of fever, considered as primitive diseases, may, excepting some of little importance, be all referred to the following heads: first, to the action of cold upon the body heated, or perspiring: to sudden changes of the atmosphere, particularly from dry and warm, to cold and humid. Second, to contagion introduced into the sanguiferous system. Third, to miasms from marshes, which give rise particularly to the endemic intermittent fevers. Fourth, to passions of the mind.

These causes, which differ so much amongst themselves, produce likewise, when they act separately, fevers of a totally different nature; and when it happens, that two or more of those causes, so different, concur to produce a fever, then, the nature of such fever is determined by

the complication of those causes, and by the individual condition of the body upon which they act.

For the purpose of shewing how far a knowledge of the character of the cause, according as it elevates or depresses the vital powers, may contribute to the indication, or contra-indication of a heroic remedy like bleeding, let me be allowed to offer an example of each species.—

The *synocha*, or inflammatory fever of Cullen, *fièvre inflammatoire non putride* of Boerhaave, *causus* of the antients, *fièvre angeiotenique* of Pinhel, &c. is often owing to the influence of cold, acting as a stimulant, and increasing the irritability of the arterial system; this fever is also characterized by all the symptoms of an effort of reaction, such as, increased heat, a full, frequently hard pulse, the urine bright and high coloured, the intellectual functions little or not at all disturbed, &c.

In this fever, the powers are sometimes raised to an exorbitant degree, but are never depressed, except from circumstances foreign to the nature

of

of the disease: consequently, if the physician thinks of doing any thing here, it will always be to moderate that exorbitancy, not only because the phenomena of the disease shew excitement, but also that the cause, which I have supposed to be the action of cold, constantly produces those symptoms, and that at least it never acts in a sedative manner, upon subjects in whom the vital powers have any vigour.

Let us take on the other hand, a robust subject who, after being exposed to contagion, offers at first, on falling sick, some equivocal signs of reaction of the sanguiferous system. Well, as soon as the nature of the contagion, which I suppose to be that of the putrid fever, is known, the penetrating physician stands upon his guard against those insidious symptoms; unless in very particularly urgent circumstances, he will defer the employment of the debilitating cure, or abstain from it altogether, and that precisely because he knows, that the diseases which arise from this cause (*qui reconnaissent cette cause)* very often announce themselves in an insidious manner, and that the contagious matter *(levain contagieux)* pro-

duces

duces a species of excitement *sui generis*, which, after a momentary empire, suddenly degenerates into a universal sinking of the strength.

This principle becomes still more evident in the intermittent fevers, seeing that all those which are observed in our departments may, according to their exciting causes, be divided into two quite distinct classes.

In the one are ranged, first, the intermittent fevers which, whether in spring, or in autumn, owe their origin to the periodical revolutions of the temperature, or to other manifest qualities of the atmospheric air; then follow all those which, like other sporadic or epidemic diseases, are excited by any cause, whatever it may be, with the sole exception of miasms. These fevers, essentially different from the intermittents of marshes, which compose our second class, may be ranged among the *synochi*, when quite free from gastric complication: with that complication, they constitute, under various forms, the *bilious intermittent* of Stholl, the *gastric* of Cullen, or the *meningo gastrique rèmittente* of Professor Pinel. None of these fevers, whether assuming the intermittent, or remittent type, have any thing contagious: they

they present themselves very often in spring, with a greater reaction; they therefore demand bleeding in many cases which we shall detail, whilst the autumnal gastric fevers, although produced from the same cause, which we suppose to be the action of cold, much more rarely require it, the gastric complication always exercising on the reacting system an influence more or less sedative and debilitating.

We have placed in the second class, the endemic marsh intermittents. In this country, they are observed principally in the Isles of Zealand and circumjacent parts, which are in general marshy, low and damp. They are rarely quotidian, more frequently tertian, and when quartan, they are exceedingly obstinate. They principally prevail in autumn, respect neither age nor temperament, rather affect strangers than inhabitants, and stamp all, whatever may be the constitution, with a cachectic or dropsical diathesis: with some, these fevers are simple, in others complicated with gastric symptoms, and presenting other forms and periods; sometimes they are connected with contagion, and produce double tertians (*hœmitritées*) malignant and extremely fatal; I saw hundreds of these cases last

last year, among the soldiers returning from the Island of Cadsand.

This is, if I do not deceive myself, the kind of intermittent which the Illustrious Society had particularly in view, when it proposed the delicate question on the use of blood-letting in intermittent fevers, &c.

We cannot resolve a problem, of such extensive import in the treatment of diseases so frequent, without previously pointing out the theory of their nature: I propose to treat then, in the following section, of the origin and peculiar character of the marsh intermittent fever.

SECTION SECOND.

Of the Nature and Causes of the Marsh Intermittent Fever.

I Have thought proper to distinguish essentially, these fevers from every other species of intermittent, and I have assigned to them a special

special character of debility, because, study and observation have taught me, that their procatarctic causes are all debilitating, and that their proximate cause itself, consists originally, in a particular atony of the nervous system. That I may not appear to establish gratuitously, an opinion so important in practice, I shall attempt to collect here the principal proofs of it.

1st. The authors of greatest authority in medicine, assign to endemic fevers *a cause by which the vital power is directly injured.* Boerhaave, and his commentator Van Swieten, (1) believed it to depend so much upon the nervous system, that they compared it with that which produces the periodical paroxysms of epilepsy. The opinion of the great practitioner Stholl, is hardly different; "The proximate cause of those fevers," says he, "belongs "to the nervous system, (*au genre nerveux*) affected in a manner which we hitherto cannot "explain." Doctor Senac on this subject thus explains himself: "It is impossible to establish, "in a matter of such obscurity, what is pre-

(1) Van Swieten, Ty. p. 755.

" cisely

" cisely the proximate cause, it appears alone " certain, that something adequate to excite " the fever is introduced into, or developed in " the body." And farther on he says: "As these " fevers prevail at certain seasons, they also " prevail in certain places, and more particu- " larly in marshy countries."

The opinion of the celebrated Professor of Edinburgh, appears to me to come nearer the truth.

" We only know," says he, " one kind of " miasm which we can regard as the general " cause of endemic intermittent fevers; it is " that exhalation which is raised from marshy " or very humid places, subsequent to the heat " of summer and of autumn. There have been " collected so many facts on this subject, and " in so many places of different climate and " temperature, that we can no longer doubt " those miasms to be universally the cause of " intermittent fevers." He adds, " that those " miasms are composed of putrid gaseous " emanations, which, arising from a humid " soil in consequence of heat, exercise a seda- " tive and debilitating influence upon all " within the sphere of their activity."

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I shall not cite a variety of other authors, who all agree that the essence of these fevers consists in a certain affection of the nervous system, variously modified.

2nd. The debilitating nature of the cause of these fevers is otherwise proved, by the constant observation, that where they are prevalent, other diseases of debility are equally common; the scurvy, dropsies, and every other species of cachexy, there go hand in hand with the intermittent fevers.

3rd. There constantly exist also in those countries, other accessory causes, as we shall hereafter see, all calculated to produce diseases of debility.

4th. The fevers prevail there particularly during the autumn, and in that season, all other febrile diseases, which are there observed, are of the putrid or nervous kind.

5th. The pathognomonic symptoms, which marsh intermittent fevers present from their attack, and during their whole course, evidently shew a state of debility of the nervous system; such as, weakness of the pulse, lassitude of the

the voluntary muscles, difficulty of respiration, paleness, blunting of the intellectual functions: to these might be added deprivation of the appetite, bitterness of the mouth, clamminess of the tongue, sometimes diarrhea, tension of the hypochondria, &c. which announce languor of the digestive powers; and when there is nothing whatever in the primæ viæ, these last symptoms arise directly from the debilitating cause which has produced the fever, as *symptoms of the cause*. (See Gaubius's *Pathology*.) As for the rest, although the phenomena which appear in the hot stage seem to stand in the contrary sense, they can in no way weaken the hypothesis of a pre-existant debility, because they are to be considered as produced by the reacting power, which directs secondarily, all its efforts to the re-establishment of the equilibrium, broken by the sedative impression.

6th. There is no disease whatever so apt to relapse from any debilitating cause as this species of intermittent fever. I have a hundred times witnessed sick, removed from the neighbouring marshy places, to the hospital of Ghent, and perfectly cured, immediately experience a relapse, either from having committed an irregularity in diet, or from some affection of the

the mind, or, which frequently happens, from exposing themselves too soon to the cold and moist air: for it is known, as we have above remarked, that cold acts on the weakly and on the convalescents as a debilitating power.

7th. The means of cure in those intermittent fevers also concur to confirm our opinion; these are, tonic and corroborating remedies of every species, such as we generally use in all other diseases of debility, (*langueur*.)

I hope then we are authorized to establish, as demonstrated fundamental truth, *that the cause of intermittent fevers, particularly of marshes, is in its nature, sedative and debilitating.*

It may now be asked: From whence arises this particular debilitating cause in marshy countries. Does it consist in an exhalation, from the sea or from the land, or rather in some state of the atmosphere peculiar to those places? Is it owing to the quality of the food or drink, or to several of these causes together

As hitherto this question has remained undecided, let it be allowed me to put forth on this

this subject, a particular opinion published in a very learned little dissertation of my former colleague M. Van Aenvanck, then Professor of Chemistry at Louvaine, written in Flemish under the title of *Verhandeling over den invloed der baekkerde aarde (humus) op den luchtskring, als eene bezondere oorzaak van afgaande koortsen voorgesteld.* (A Treatise concerning the Influence of Cultivated Land on the Atmosphere, considered as principal cause of Intermittent Fevers). I submit the ideas of my honorable colleague to the judgment of the learned, in the hope that those who more particularly cultivate chemistry, may take, perhaps from thence, some hints.

That opinion is founded upon the following grounds.—

It is demonstrated that the cause of paludal fevers, whatever it may be, is debilitating. It is also proved from experience, that that cause does not arise epidemically, and if the expression is allowed me, permanently, except in low and humid lands. But this sedative power cannot be conveyed there from the neighbouring parts, since we find the neighbouring regions quite healthy, even contiguous

to those marshes; neither is it thither transported by the sea winds, since the air is found perfectly wholesome in every island that is not marshy. (1)

What must be the conclusion from this fact, if not, that the deleterious quality of the air which is respired, and of the water which is drawn in those unwholesome places, is owing to a vice inherent in the soil itself? This is what I proceed in endeavouring still further to prove.

Experience teaches us, that the atmospheric air which does not possess a sufficient quantity of oxygen, or which is surcharged with azote, is hurtful to those who respire it, and that it is capable of engendering very malignant nervous fevers, which is fully proved in the hospital and goal diseases; that a similar state must be that of the atmosphere in marshy countries, particularly in autumn, is equally proved by the experiments of the celebrated chemists Van *Humbolt* and *Ingenhouz*, who demonstrate, in some earthy substances, very abundant in those parts, a very active faculty of extracting and absorbing oxygen from the atmosphere.

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(1) Nouvelle Hygiène de Singlar.

For the purpose of proving that simple earth (humus) newly laboured, has the property of absorbing oxygen gas, Humbolt first procured some argillaceous earth from the salt works of Austria, and of the Alps, and he therein found a much greater affinity for oxygen than in any other species of earth whatever; he found even the galleries of those salt works all filled with azotic gas, abandoned by the vital air. He afterwards exposed to oxygen, some of the grey sigillated earth, saturated with carbon, and found that, in the space of eighteen days, six-sevenths of this gas had disappeared, and was united with the argillaceous earth. He thence concluded, that the atmospheric air in contact with a similar substance, must loose a great deal of its oxygen, whilst the quantity of azote will remain nearly the same. What is well worthy of remark is, that the argillaceous and calcareous earths, being rendered dry, produced no change whatever on the atmosphere.

Morozzi and Roupe have proved, by experiments which they have also made with wood charcoal perfectly quenched, that the carbonic gas, being free, easily and spontaneously unites itself to the two other constituent parts of the atmosphere, without causing in them any alteration;

teration; but that when this same carbonic gas is saturated with azote, and when it is thus joined to the atmospheric air, it deprives the latter of a great part of its oxygen. It is not then surprising, that similar phenomena should take place in respect to recent cultivated land, since the carbonic gas is there naturally combined with the azote.

From these experiments, of which I here only offer the analysis, result the following corollaries.—

1st. Pure vegetative earth, free from heterogeneous matters, never produces upon the atmosphere the pernicious effects which it causes when in conjunction with other species of earth, or other substances which have a great affinity with oxygen. (*See* the Memoir of Van Humbolt, p. 32. or the *Dissertation* just quoted.)

2nd. Of the earths, none possess this quality in so great a degree as the argillaceous, when conveniently circumstanced. (Ibid, p. 5, 14, 17.)

3rd. When, in the places where it abounds, argillaceous earth is preserved in a state of continual

tinual humidity, it causes a considerable subtraction of oxygen; and that the air may acquire that deleterious quality, it is necessary, as Cullen has also remarked, that the marshy humid soil should be in immediate contact with the atmosphere, for as long as it is found covered with a certain quantity of water, it produces no disease whatever; Pringle also remarked that the inundations of meadows to a certain depth, is by no means so pernicious as when those meadows, yet humid, are exposed to the immediate contact and heat of the atmosphere; it is for this reason that he recommends rather to leave the places inundated, than to expose them to the air half dry. He rests this advice upon the following example: In 1748 the lands round *Breda* and *Bois-le-Duc*, had been inundated for the purpose of placing those fortresses out of the reach of the enemy; when, at the commencement of the following summer, the water was taken off, a putrid fever appeared, with so much violence, that the States General found themselves under the necessity of re-establishing the inundation of those lands, until the following winter. There is still a fact well worthy of remark; whilst the fever raged at Breda and Bois-le-Duc, they

had

had nothing of it at Eyndhoven, a small distance from thence. *(1)*

Indeed the facts instanced by Prosper Alpin, (2) respecting the cities of Alexandria and Cairo, prove, that that same cause may occasion every where, similar diseases of debility, and sometimes even a pestilential degeneracy. He relates, that whilst the fields, inundated by the Nile, grow dry in the heat of summer, the plague commits the greatest ravages there, and that it does not begin to decrease until about the 17th of June, the period at which the river renews its inundations (3).

4th. This subtraction of oxygen must occur particularly in the low regions of Holland and Zealand, where the argillaceous earth is constantly wetted, either by the rupture of the dikes, or from the particular situation of the ground, beneath the level of the sea, from which a certain quantity of water escapes and

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(1) L. C. tom. 1, pag. 124 and 125, (see further, on this subject, p. 231 of the same author, and Forestus, lib. 6, obs. 9, schol.)

(2) De Medic. Ægypt.

(3) *See* again A. Mead, on the Plague, p. m. 24.

filtres

filtres continually into the soil, through the subterranean passages.

5th. The same thing occurs in all low and humid towns, above all, where calcareous and argillaceous earths are retained with putrefying vegetable and animal matters, in neglected dikes. We may take, for example, the town of Antwerp; the numerous canals, obstructed for ages there, sustained perpetually, if I may say so, intermittent and putrid fevers; public authority having ordained the scouring of those canals, the insalubrity greatly diminished in the city.

6th. We may add to the foregoing, the eudiometrical experiments of M. Van Humbolt, in his Meteorological Tables, which shew, that in rainy weather, the atmosphere contains much less oxygen than in clear calm weather. Then it is notorious, that the principal rains generally fall in spring and autumn, and that it is also in those seasons that intermittent fevers most prevail.

7th. Now as oxygen gas is that constituent part of the air, which stimulates and sustains the animal and vital powers, it follows, that its

its scarcity in marshy countries, must debilitate the vital œconomy, and produce diseases which directly depend upon such debility.

Although the hypothesis of Professor Van Aenvank, concerning intermittent paludal fevers, suggested to him perhaps by the discoveries and experiments of some celebrated modern chemists, be very ingenious, and seems to approach near to the truth, I hope, however, it may not be altogether useless to compare with it, another explanation of the origin of the endemic fevers of Zealand, taken from the works of the learned Professor of Edinburgh, and which, appearing altogether more conformable to the evidence of facts, is not, however, in contradiction to the former.

Every one who has any knowledge of Zealand, is aware, that the surface of that island is below the level of the sea, and that it is protected from marine inundation only by strong ramparts, the integrity of which demands the greatest attention.

The canals and sea coasts are full of mud, a dirty greenish earth, which, at low tide, when it is in contact with the air, emits an excessively foetid exhalation. The heat of summer and

and of autumn causes an evaporation of the putrid miasms contained in the mud, and those miasms, extremely volatile, are easily raised, and remain suspended in the atmosphere, to which they communicate that fœtidity which is sometimes insupportable.

The inhabitants of those countries respire then, with the air, those putrid miasms, which not only communicate to the atmosphere their peculiar odour, but also their deleterious and sedative qualities; it is from thence we can account for the sudden attack of the fevers of Zealand: for, as the celebrated Cullen remarks in his excellent Treatise on Physiology, the putrid miasms, acting in a sedative manner upon the brain, diminish its energy, and produce that which he calls *collapsus*. Observe, in fact, what some patients experienced in the military hospital of Middleburgh: whilst during the interval of their fits, or in their convalescence, they exercised in the court of the hospital, opposite to which was a miry canal, they first felt a disagreeable fœtid smell; then they were seized with extreme weakness, which they felt particularly in the epigastric region; the motion of the heart gradually became slower and weaker, to a degree, that if they could

could not immediately reach their bed, they fell to the ground. The cerebral organ was then in a manner weighed down, *(en quelque sorte affaissé)* the whole animal œconomy in a state of torpor, and they were seized with an invincible disposition to sleep.

These are certainly, I think, the evident symptoms of that which Doctor Cullen calls collapsus of the brain, and there can be no doubt that these phenomena are the effect of putrid miasms, exhaled from the mud of canals, and suspended in the atmosphere.

Let us, however, reconcile the two opinions. It is by no means contradictory that the putrid miasms, besides their direct sedative action on the cerebral system, may yet have the property of decomposing the atmospheric air, and of breaking the connection of its two constituent parts; for it may very readily happen, that these putrid miasms, being of an azotic nature, may attract oxygen, absorb part, and consequently deprive the atmospheric air of it, which, in this state of degeneration, can no longer produce the salutary effects of a wholesome respiration.

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Whatever it may be, both causes will always produce the same result, viz. nervous debility, or collapsus. Further, that relating to the changes which the air undergoes in respiration, and its influence upon the vital principle, I must refer to the works on physiology.

Amongst the collateral causes which concur in the production of endemic fevers in the marshes (*poldres*) of our neighbourhood, one of the principal is, without doubt, the bad quality of the water, which I have myself examined, and on which I shall say a few words to conclude what I had to establish concerning the causes of paludal fevers. The water which the inhabitants drink, and which they also make use of for culinary purposes, is generally either rain or well water; the former is preserved in many places for common purposes, in reservoirs lined with lead, where it is not rare to find it stagnant, filled with insects and filth; many even of those cisterns destroyed, spoiled or ill preserved during the tumultuous period of the revolution, occasions often in summer, an absolute want of rain water, which renders it necessary to have recourse to the well water, still much worse. This last is nearly the same throughout the country, of a nature more or less

less stagnant and marshy; it is muddy, stinking, and contains an abundance of animal and vegetable matter in a state of putrefaction; such I have found it; accustomed to the best water, it appeared to me so bad and so revolting, that it was impossible to use it: in fact this water freezes less readily than any other; it is heavier, and stains copper.

When I communicated my opinion last year, to two officers in garrison in the island of Zealand, concerning the insalubrity of the waters in that country, they dreaded them, drank nothing but wine, and both escaped the epidemic. I have a friend, Secretary General to the Prefecture of the Mouths of the Scheld, who, for three years that he has resided at Middleburgh, neither he nor his family, nor any of his domestics, have been attacked with endemic fevers; but neither does he use, in his whole house, any drink, but carefully filtered water, or wine.

I have entered into all these details, to shew more clearly the difference which exists between paludal fevers, and those which arise from other causes less debilitating; a difference not only apparent in the causes and respective progress

of

of those fevers, but which extends even to the method of cure, since the one, for instance, frequently admits of bleeding as a remedy, whilst in the others, it would be almost constantly fatal.

SECTION THIRD.

Indications and Contra-indications of Blood-letting.

As intermittent fevers in general must rather be classed with diseases of atony, than with those of an opposite character, it thence results, that bleeding can have, in them, only a relative utility. We have recognised, in paludal fevers, a special character of debility; so that *depletion* is there never called for, except under urgent, and always accessory symptoms, similar to those which call for that operation in the putrid and mixed fevers, of which we shall treat in the third part.

Although the other species of intermittent fevers, as little admit of bleeding as a remedy appropriated to the fever itself, they present, however, much more frequently, some complications which demand it; we might doubtless deduce these from the general principles already laid down; but I have thought it better to mark them here more particularly. I will observe then, in the first place, that some times, though rarely, blood-letting is necessary in the fit even of those kinds of fever, the paroxysms of which we may contemplate, with Werlhof, as diseases of a peculiar kind, very acute, sometimes even very fatal, and which, having hitherto no remedy calculated to produce their immediate solution, may imperiously require blood-letting as a palliative. Upon this principle it may be practised in the hot stage, when there is severe head-ach, or delirium, when, above all, a concurrence of circumstances, especially in the spring, foretels the inflammatory diathesis and tedious paroxysms. This is the opinion of Vogel, of Senac, and of the celebrated Trnka de Trzowitz. (1).

I pretty frequently prescribe bleeding in the

(1) Hist. Febr. intermitt. part ij. Sect. p. 312.

intermittent

intermittent fever not paludal, whatever may be its type otherwise, when, about the end of winter, or even in spring, we have dry cold weather, and that the character of the prevalent diseases belongs, in general, to phlegmasia, because, in that case, the intermittent fevers, those especially which lean to the double tertian type, anticipate, at first, upon their paroxysms, afterwards degenerate into continued inflammatory fevers, or easily partake of the prevailing phlegmasia.

This confirms the curious observation of Stholl (1): " I have seen," says he, " towards
" the spring, and without there having been
" any recurrence of cold, the peripneumony
" return every third day, with pains of the
" head and loins, thirst, cough, &c. On the
" first days, there was a complete apyrexia, which
" was no longer remarkable on those follow-
" ing. We bled twice; the second on the
" sixth day: on the seventh, the yellowish
" lining of the mouth and lips, declared the
" disease.

(1) Adversar. Var. Argum. in rat. Med. T. 4, page 489.

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I may add, that at the period I make this extract, (April, 1811) I daily remark the same thing in our hospital.

When these fevers affect full and plethoric subjects, we rarely find the cold, hot, and sweating stages well proportioned to each other; the paroxysms frequently appear with a sensation of heat, the fits are violent, the pulse is full and hard, and continues so, even after the paroxysm; the head-ach is violent and obstinate, the face red, the tongue clammy and whitish, sometimes dry; the respiration is difficult; frequently there is cough; the urine is bright and fiery; if, in this case, we do not bleed at first, we run the chance of seeing this, change into a continued fever. Grant contends, on this subject, that a head-ach which begins with the hot stage, increases during its progress, but by no means disappears at the end of the fit; that it returns at intervals, during the apyrexia, does not yield either to emetics, cathartics or blisters, but to bleeding alone, as being of an inflammatory character. I have collected some further authorities on this subject, as well as a certain number of cases, in which blood-letting was attended with success; I think the mention of them may not be uninteresting

teresting to the reader. In the first place, we find in Forestus (1), the history of a tertian fever, the third fit of which, already causing violent delirium, cured by a bleeding in the apyrexia. The same author gives the case of a patient, who, having been bled, and his bandage coming undone during sleep, lost so much blood, that he was almost dead from it, but found himself cured of the fever.

Amatus Lusitanus (2) instances a woman cured of a double tertian fever, by a single bleeding; Pechlinus, (3) a country girl who, bled by mistake from the artery, instead of the vein, forthwith recovered from her tertian fever; Riverius, (4) a young man who, after two fits, was cured of the same fever by a single bleeding, and without any other remedy. These cures, singular in appearance, afford nothing astonishing, if we suppose that the subjects were robust, in the flower of age, and that there existed a phlogistic diathesis, &c. Trnka quotes, upon

(1) Lib. 3, observ. 2.
(2) Cent. 7. Curat. 51.
(3) 1 Col. l. ii. obs. 12, page 227.
(4) Cent. 1, obs. 20.

this subject, the opinion of Sydenham; "If, in "young and robust subjects, bleeding in "tertian fevers, does not immediately arrest "the succession of paroxysms, it will prolong the "disease; if in aged people, their protracted "sufferings will terminate only in death."

From all we have seen, we must infer, that, if there is any object to justify bleeding, it is necessary to practise it in the commencement, rather than at an advanced period of the disease.

Bleeding may yet be indicated in some cases, where the suppression of a sanguineous evacuation, such, for example, as the menses in females, is complicated with intermittent fever. This coexistant plethora, is capable of throwing upon vital parts, some secondary diseases, frequently incurable: that state is easily recognised, as well from the procatarctic causes, as from the existing symptoms of plethora.

Trnka (1) has furnished us with a very instructive case. A woman took a tertian fever

(1) Tranka, p. 2, pag. 828.

while

while giving suck: Madai used several remedies without success, he at length found, by interrogation, that she had had three children, and, that at each time, her menses had appeared a few days after her accouchement; that this time, she had not observed them, but, that at each fit of the fever, she had pains in the back, much more severe than those of labour. Having made this discovery, the physician laid aside medicines, ordered a bleeding, and the fever disappeared. It returned anew at the end of four weeks, and was again removed by a bleeding; having again reappeared later, it was still repelled by the same means; at length, the menses supervened, and the fever returned no more.

I have myself seen many similar cases, in which I have constantly observed fixed pains in the back, and region of the sacrum. Those pains, which were greatly exasperated during the paroxysm, but by no means ceased with it, were not increased by motion, as in rheumatism; they were felt deep towards the haunches, and greatly resembled those of labour. In this case, the fever readily anticipates on its paroxysms; the cold stage is shorter, the hot one

one longer than ordinary; there is violent unceasing head-ach, and the secretion of milk, which very soon diminishes, still adds to the plethora, and to the violence of the disease.

Blood-letting, *cœteris paribus*, is again particularly indicated in the pregnant state, especially in women who, towards the sixth or seventh month, have œdema of the feet, head-ach, and short respiration. I have witnessed some melancholy cases of convulsions, and even abortion, result from not having made use of this remedy. Riverius (1) cites a case of this kind, cured by bleeding: a woman, seven months gone, being attacked with a double tertian, which remained with her a whole month, notwithstanding three bleedings and two purgatives, was at length bled, an hour before the fit, and the fever disappeared. (2).

This practice is particularly necessary, when, under circumstances which favour the inflammatory diathesis, the intermittent, imitates the

(1) Cent. 4, observ. 72, et 12, 83.
(2) See on this subject Montius, bib. 4, c. 9.

continued

continued remittent fever, (*la fièvre continue rémittente*) because the accumulated paroxysms quite intercept the apyrexia; then, frequently, by a single bleeding, the fit becomes single, from the double that it was; and these fevers, which obstinately resisted the bark, and were only exasperated by its use, easily yield to the febrifuge, when, by *depletion*, we have obtained some intervals, and changed the morbid state of the constitution. This is what many authors have observed; (1) it is what I have seen myself. (2) May I not then, under these circumstances, mark the resistance of the fever to bark, as a characteristic sign of the indication of blood-letting?

The question concerning the utility of bleeding in intermittent fevers, complicated with dropsy, has been agitated; for the purpose of giving a satisfactory answer, I think it necessary to establish a distinction. First of all, when the dropsy is owing to the duration of

(1) Monro, l. c. p. 343. Trnka, sect. 1. cap. 5 et 25, Stholl, ads. var. 4. 477. Forestus, Senac. Huxham et d'Autres.

(2) See, in the last part, an observation which I make, among many others of this kind.

the fever itself, to its character of quartan or paludal, or, to its complications, as, obstructions, particular atony of the exhalent system, &c. we never ought to bleed, because this disease is then only a further proof of the existence of a cachectic state. But I have sometimes met anasarca, in young and robust subjects, accompanied by the tertian or quotidian: then, both the dropsy and fever should be considered, as arising simultaneously from plethora. If, in this case, bleeding be neglected, anasarca in the lungs, or hydrothorax, is very often the melancholy consequence. It is in this place we might apply the aphorism of Stholl: "If the "patient breathes with difficulty, bleed at the "arm, was he dropsical."

Having now determined the principal circumstances which may demand bleeding in intermittent fevers, I proceed to bestow some consideration on the cases which specially forbid this remedy.

From the preceding section we have learned, that the intermittent paludal fevers possess an essential character of debility. Whatever, then, may be the progress of those fevers, whatever

subject

subject they attack, we will recollect, that the nature of the disease directly forbids bleeding, and we will never practise it, except from some very urgent particular considerations, and always with prudence, and sparingly.

It is a general observation, that the quartan fevers, those, at least, which we see in this country, throw the patients into a cachectic, or leucophlegmatic state, much sooner than the other species of intermittent fevers. We may thence conclude, that they are owing to a cause more sedative, and that, consequently, they much less admit of bleeding: this opinion is supported by the English Hippocrates, *Sydenham*: "Venesection," says he, "is so hurtful "in the quartan fever, that young people, who "might recover in the first six months, "still labour under it during the six months "following; and that aged persons who, "without bleeding, might have been cured "in a year, with it, fell victims to the dis-"ease, at the end of the second year."

However, there is no want of authority to justify the employment of this remedy; but, as those conflicting opinions might embarrass young practitioners, I have thought proper here

here to state, what authors have most absolutely established in favour of bleeding, in the quartan fever; and then, to add some reflections, for the purpose of determining the judgment to be drawn from it.

In the first place, we read in Stholl (1); "I "am aware that the quartan fever has been "sometimes cured by bleeding. The great "affinity of quartan fever with epilepsy, and "other diseases of the nervous system, is "known; now, as among the various causes "of epilepsy, plethora is also met with, this "then, might be, in the same manner, the cause "of quartan fever."

That bleeding may have sometimes cured the quartan fever, is not at all astonishing; we shall see some kinds of fever, among those by no means paludal, which acknowledge it as their principal remedy; but, however great our respect for the author quoted, we know not how to pass over the weakness of his conclusion. What! because two diseases, perfectly distinct, have some affinity, we must admit the one, as owning all the various causes of the

(1) Rat. med. tom. 4. 459.

other!

other! Besides, is it right to make no distinction in the species of quartan fever? Again, Senac declares (1) "that he has not been able "to subdue many quartan fevers, except by "bleeding, and that, by it, he has produced "such a change of constitution, that the disease "has immediately ceased, or at least its "violence has been very much reduced."

I would not have recourse to blood-letting, for the purpose of changing the disease. When I wish to obtain that effect, in obstinate quartan fevers, I would rather have recourse to repeated emetics, than to evacuation by blood. The celebrated Trnka (2) quotes from Hoffman, the case of a pregnant woman who, being afflicted during three months, by a quartan fever, which resisted every remedy, was cured of it by a bleeding from the foot, in the period of apyrexia, and without having suffered abortion. He adds: "I have known many in-"stances of obstinate quartan fevers, cured im-"mediately after a bleeding from the foot, "by treating them with the appropriate "remedies."

(1) L. c. lib. iv, c. 9. s. 5.
(2) P. 2, pag. 634.

We

We might easily go on to multiply such citations. But what do they establish? Nobody doubts, that in pregnant women, attacked with this fever, there may exist complications which demand bleeding; it is then practised, not on account of the character of the disease, but rather in consequence of the coexisting plethora, or for some particular affection, which we frequently meet with in the pregnant state.

But, far from having observed many such cases as these authors relate, I can assert, that, living in a country, the almost perpetual theatre of those diseases, I have seen very few quartan fevers so complicated, as to require bleeding, although even now prevalent. I remember, for instance, a robust labourer, subject to epistaxis, who, in a quartan fever, suffered a horrible headach, approaching almost to delirium: I caused him to be bled in the very paroxysm, and I succeeded. Another case occurs to me, in which anasarca supervened, after the fourth paroxysm; the anxiety was such, that the patient was almost suffocated: he was not only relieved by bleeding, but the paroxysms became so slight, that shortly afterwards, they yielded to the first dose of bark. However, it cannot be too often repeated, that these cases, being very rare, should by no means alter the general rule.

Here

Here, now, are some points relating to the quartan fever, cured by the application of leeches to the anus.

Trnka (1) has taken from Madai, the observation respecting a soldier, cured of a quartan fever after the ninth fit, by the application of leeches to the hæmorrhoidal vessels: Raygerus gives an instance of a robust man, of a melancholic temperament, who, by the same remedy, was cured, in the spring season, of a quartan fever which had lasted the whole winter, and eluded every antifebrile remedy, even the bark, although the patient had had periodical bleedings from the nose. Forestus relates the singular case of a gentleman, for a long time afflicted with a quartan fever, and whose blind piles terminated in ulceration, which, discharging a great quantity of matter, put an end to the fever. (2) We read, in this author, many other similar cases, which have suggested to Riverius, that, "If the hæmorrhoids super-"vene in the quartan fever, far from stopping "their discharge, it must be promoted, and "we ought even to try to provoke, or to form a

(1) L. iii. obs. 41.

(2) See a case of this kind in the last section of this work,

"substitute

"substitute by leeches." Hildanus affirms also, that in this disease, the same practice has perfectly succeeded.

In fact, I have myself often observed, that the causes and effects of those fevers, rest in the system of the vena portæ; that when we suddenly arrest them by febrifuge remedies, atrabiliary obstructions, and even mesenteric phthysis ensue, and, that in these affections, the hæmorrhoidal discharge brings great relief. *(a)*

Having thus established some principal rules concerning blood-letting in regular intermittent fevers, it is proper also to lay down some for

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(*a*) It has been, perhaps, too much the fashion to ridicule our ancestors and their remedies: modern genius o'ersteps the calm and simple majesty of nature, and, in derangements of the hepatic system of circulation (generally induced by palpable deviations from her more simple dictates) relief, is now-a-days spurned from such silly hands; mercurial purging and salivation, bleeding, chemical maceration, and partial decomposition, in acid and poisonous menstrua, &c. now look down upon *her* humble and ordinary means, (air, food, employment, exercise, and hence the *natural* secretions or discharges) for the support of health and removal of such diseases.

those, which, although of the nature of intermittent fevers, shew themselves under the form of a disease essentially different, hence termed masked fevers *(fièvres masquées.)*

We rarely bleed in the masked fever, at least, when not under the form of some very dangerous inflammatory disease, then, it must be practised during the paroxysm itself. Of this kind of fever, there is none so dangerous, as that which shews itself under the apoplectic form, and from which Werlhof has named it. The following is an account of this fever, as curious as it is deceitful, and such as I have been able to observe it, in three different cases.

It is principally met with in autumn, during the prevalence of putrid and nervous fevers. Some days before its attack, the patient complains of slight lassitude, restlessness, and of interruptions in his sleep; the moment he shuts his eyes, it seems to him, as if some extraordinary objects, such as spectres, danced before them; he is afflicted with fixed and lancinating pains of the head, and in the orbits; frequently, he cannot even bear the day light; when we examine him attentively, we discover something unnatural in his manner and cast of countenance,

tenance, very difficult to describe; at times, the complexion is a little higher coloured, the pulse is slower and fuller than ordinary; now, again, on the contrary, the countenance is paler, the pulse depressed: but, as at first, these symptoms are not very troublesome, the patient hardly complains of them, and has no suspicion of danger even approaching. This deceitful state lasts for three, four, or six days, until, at length, the patient is seized simultaneously, with fever and apoplexy; the fit lasts, in general, eight, twelve, and even twenty hours: when it is over, he generally finds himself free from fever; he remembers nothing, and complains only of great lassitude.

I have given this description, to warn inexperience against the employment of blood-letting, a remedy extremely dangerous in this disease, because it is frequently practised under a mistake, from which I have seen fatal consequences.

For the purpose, in short, of discriminating every case in which bleeding is particularly dangerous, the general principles, which we have laid down in the first part, should be referred to; they consist in a scrupulous observance

servance of the season, the constitution of the atmosphere, the nature of the epidemic, the character of the predisposing and occasional causes, former evacuations, &c. &c., and above all, the constitution of the subject. If, for example, his constitution has been rendered more weakly and sensible, from the duration of the fever, which state has become, as it were, habitual to him, then, bleeding will still augment the febrile disposition, and there will arise, from its abuse, such a weakening of the sensorium, that many patients fall into idiotism, melancholy, or mania from it. Sydenham, the first who recorded this species of delirium, (1) has remarked, that the disease is not to be cured, but by corroboratives. Van Swieten has also made use of masterly reasoning upon this subject (2).

We have shewn, that, notwithstanding the nature of intermittent fevers, depletion becomes necessary, when we meet with some particular complications, some symptomatic disordered impulse, &c. which might, of themselves, involve the life of the patient: again, some of those circumstances are also met with, which, for the

(1) Oper. omn. T. 1, p. 260.
(2) Comment. T. 3, p. 530

same

same reason, appear, imperiously to demand blood-letting, but whose fallacious nature, leads to an erroneous, and sometimes fatal practice. Such are, the anxiety, and head-ach, proceeding from inebriety, or, from an excess in spirituous liquors, (common enough with most people,) which have aggravated the paroxysm of fever, and carried those symptoms to an alarming degree. Such is, again, the head-ach depending upon gastric complication, which prevails frequently in autumn. To ascertain whether the gastric symptoms depend upon the fever itself, or are only complicated with it, it is sufficient to attend to the periods of their development: in the latter case, they appear at a longer or shorter time before the attack of the fever, whilst, in the former, this last has almost unexpectedly attacked the subject, enjoying the free exercise of his digestive functions.

A circumstance, frequently very embarrassing, is that, where the intermittent fever attacks a lying-in woman, already debilitated. The sensibility, which, in this state, is always raised, sometimes produces singular phenomena; these women fall easily into delirium, and their disease may be thought of an inflammatory nature: in this case, it is necessary to examine

examine, with the most scrupulous attention, if there exists any local affection, whether of the uterus, of the intestines, or of the head; if none is discovered, bleeding should not be adopted; if there is, on the contrary, depletion may be indicated, in proportion to the degree of phlogosis, as well as of the other circumstances here mentioned, and be put in practice, previous to treating the fever with febrifuge remedies. I can declare, that in this respect, there are many errors committed, particularly by accoucheurs, too often destitute of medical knowledge.

The same attention should be directed to an intermittent fever, in the course of which, the effects of an acrid or poisonous substance, or of a too violent medicine, are to be remedied, these effects give rise to disordered affections, and local inflammations. To throw some light on the indication of bleeding, it is advisable to consider, first of all, the nature and mode of action of the substance introduced, and to remember, that, until after this remedy shall have allayed the violent, though temporary agitation of the reaction, the fever, whose essential character forbids bleeding, must only be prolonged and rendered more obstinate. It is for this reason that it is necessary, rather to direct

 all

all our attention to fulfilling the first indication, that of expelling, in the most expeditious manner, the noxious substance. If, however, the symptoms should be such, as to render probable a danger greater than that from the fever, we must not hesitate, but of two evils choose the least.

The following is a very singular instance: I have never read of any thing like it.

In October, 1809, when the intermittent gastric fever was very prevalent, a young man of twenty years of age, of an excellent constitution and sanguine temperament, took a regular tertian fever. As soon as I saw him, I ordered him an emetic, indicated by symptoms of indigestion, and three or four mild paroxysms having passed, after the emetic, I did not think bark as yet necessary. But shortly after the fourth fit, the patient committed an irregularity in regimen, and immediately complained of loss of appetite, and of a sensation of weight in the abdomen: I then prescribed for him, a drachm of powdered rhubarb, to be taken the following morning. The woman who attended this young man, procured the powder as ordered, in the evening, and at night, placed it on the table, that it might be easily found

found in the morning. Her husband, for the purpose of destroying the rats in his garden, had bought, from the same apothecary, a drachm of nux vomica, which was enclosed in the same kind of envelope, and by chance, placed on the same table, near the former. The woman, getting up early, and half asleep, took up the nux vomica in place of the rhubarb, mixed it in water, and gave it to the patient, who swallowed it at a gulp. In half an hour after, succeeded heartburn, ineffectual efforts to vomit, a universal tremor, with a particular swelling of the belly. The good people, at first attributed these disorders to the effect of the remedy; but, when, after half an hour, the sufferings became alarming, and when they had discovered their fatal mistake, I was sent for; on my arrival, I found the unfortunate young man in the following state. He was in violent convulsions, which threw him alternately, and in spite of himself, from one side of the bed to the other; he suffered excruciating pains from cardialgia and cholic, returning at short intervals; he was tormented by a burning thirst; the nausea changed to vomiting, during which, his countenance, naturally high coloured, presented a livid paleness and wild look. The belly was distended and painful to the touch,

the

the pulse small and weak, as if the whole vital reaction was concentrated in the abdomen.

My first care was to promote the vomiting by tartar emetic, and by large quantities of milk and warm water. At each time, the patient threw up a greenish matter mixed in the drink he had taken. He had no stool; each discharge brought some relief to the sufferer, as well as a diminution of the convulsive motions; at length the vomiting, diminishing gradually in intensity and frequency, ceased in the evening, when the patient had no more of the greenish matter to throw up. He passed a tolerably quiet night; the next day he was quite out of danger, but in a state of extreme debility. However, the intermittent fever, notwithstanding the debilitating action of the poison and of the pain, had disappeared, and the patient continued well afterwards.

I will observe here, that, in general, the effects of the nux vomica, of arsenic, and of those preparations which develop all their symptoms of action in the primæ viæ, as long as they debilitate the nervous system, very rarely require bleeding, and that, on the contrary, the poisons, such as the narcotics, which act in stimulating the brain and the arterial system, demand it the most frequently.

PART III.

PART III.

Of Blood-letting in Putrid, Malignant, and Ataxic Fevers, &c.

SECTION FIRST.

Of the Classification, and of the Nature of Putrid and Malignant Fevers, &c.

HIPPOCRATES, Galen, Areteus, all the antient Physicians, and most of their followers, until the time of Boerhaave, attached to the term *causus*, or *ardent fever*, the same idea which we express by putrid fever, or putrid synochus of Cullen. To be convinced of this, it is only necessary to cast a look over the descriptions of it, which they have handed down to us; we find, throughout, for its characteristic symptoms, internal heat, the remission, the exacerbation day after day, &c. which we likewise frequently observe in the first period of the putrid synochus.

It

It would, perhaps, be as tedious as useless, to enquire what the precise ideas were, which antiquity annexed to the terms *putrid fever*, *ardent fever*, *bilious fever*, and to their numerous varieties, since the hoary tribe of commentators themselves, have only led to a chaos of interminable discussions. However, it may not be unseasonable to remark, that, in admitting a putrid fever, our ancestors did not mean, by that, that the blood was what we at present term putrified. N. Pison explains himself upon this subject. "The opinion "which admits the existence of putridity of "the blood, in putrid fever, has been contested "by physicians of the first eminence; it is "now established, that the fever in which the "blood appears to putrify, may be called "bilious. And, in fact, as Galen says, when "the blood putrifies, it produces a redundance "of bile; but, notwithstanding, it remains "blood.—We should understand, that this "fluid has not ceased to preserve its nature, "but, that it has become that which may be "called bilious blood, or, in which yellow bile "is superabundant."

It must then be allowed, that we have been wrong in throwing upon them this imputation, (*inculpation*)

(*inculpation*) which does not appear to have any other foundation, than in the misapplication of the term they make use of, to express the manifest changes which this fluid undergoes, as well as all the secretions, under the influence of disease, (*durant l' alteration morbide*). *Alexander de Tralles*, even at his time, opposed the term putridity, contending, that those fevers owed their orign to phlogosis alone, and proving, that Galen had applied the term putrid, to pestilential fevers only.

Most of the moderns, without attending to the essential differences which the fevers treated of in this chapter present, have founded their denominations, as well as their numerous divisions; the latter, upon one or other of the external symptoms most prominent, hence, the miliary, petechial, putrid, catarrhal, erysipelatous, &c. the former, upon the type which they assume in their progress; hence, the remittent, the hemitritæan, quotidian; or, on some particular excretion, observed in certain epidemical constitutions of the atmosphere, as in those diseases termed worm fever, dysenteric fever, &c. or, upon the different organs, or systems, fancied to be the seat of the disease; hence, mesenteric fevers, gastric, intestinal

intestinal and nervous: others, again, upon the smaller or greater number of persons affected at the same time, upon the danger with which it was accompanied, upon the season and particular places at which it committed the greatest ravages. It was from such considerations that they have described, as new and distinct diseases, the fevers termed epidemic, malignant, autumnal, goal fevers, camp fevers, ship fevers, fevers of Lausanne, of the Seine, &c. as may be seen in Heister (1), Pringle, Gilchrist (2), Ch. Strack (3), Vanden Bosh (4), Dumonchy, Tissot and others.

This method of founding the nomenclature, and distinction of diseases, upon particular, and sometimes merely accidental circumstances, has crouded nosology with so many species, that the number becomes truly frightful. To get out of this labyrinth, we must have recourse to analysis; and it is also by this means, that, previous to proceeding to the curative indications, we shall see, first of all, how this astonishing variety of appearances is esta-

(1) Compend. med. pract.
(2) Essais de la Societe d'Edimbourg.
(3) De morbis. ptech.
(4) Hist. const. epid., vermin.

blished

blished; we shall then attempt to mark the different orders of fevers, by their essential and characteristic distinctions.

We know from experience, that the putrid, ataxic, malignant, and many of the complicated intermittents, arise from causes generally similar, as, putrid emanations, filth, contagion, endemic exhalations, &c. but these same causes, exercising their influence on men of different constitutions, also affect them in a different manner, according to age, sex, the greater or less aptitude to contract disease, or, from the particular disposition in which one or other of the organs, or system of organs, is found; whence, the one may, rather than the other, yield to the morbific cause. The alterations thus produced, will be more or less destructive, according as the integrity of the functions of the system, or of the organ affected, may be more or less closely connected with the maintenance of the vital action; and, as each system has its peculiar organization, its particular mode of action, as well as a different degree of sensibility and irritability, the phenomena which it will develop, in the morbid state, will have, as in health, a character, peculiar, and relative to its structure, and to the energy of

of its vital properties. Hence, the remarkable difference which exists between the affections of the mucous, and those of the serous tissues, between those of the sanguiferous, and nervous systems, between these last, and those of the lymphatic system; if we add now, the different modifications, the complicated causes which supervene and are developed, and their greater or less activity, and also, the weakly dispositions of the various organs, which exist so often, and under such various forms, we may easily conceive why, in one and the same epidemical season, and by the action of one and the same general cause, one person shall be affected with a simple putrid fever, another, more robust, by a putrid synochus, whilst a third, more weakly and sensible, shall be attacked with a malignant and low nervous fever, and we shall find sufficient reason for the immense multiplicity of symptoms, so varied, so singular, and sometimes so extraordinary.

Every particular case of disease, then, is determined by the concurrence of the different causes, and dispositions which we have just sketched; but as these present themselves under combinations, infinitely varied, hence, it results, that the individual diseases present

dissimilarities,

dissimilarities, as varied and as indefinite as those combinations. When medicine became a science, it was directed to the classification of this crowd of individuals, and its efforts have been more or less successful; by the assistance of a strict analysis, Nosology has at length succeeded in ranging all diseases into classes, genera and species: for the purpose of confining ourselves to our object, we have thrown into four general classes, all fevers, putrid, ataxic, malignant, &c.

Persuaded that every useful classification should exhibit the clinical characters, independent of any theory, always uncertain, and too often ephemeral, we have bound ourselves to abide by observation, without adopting any particular hypothesis: we shall therefore use indifferently, the denominations of Stholl, of Cullen and Pinel, in giving the respective nomenclature of each.

We place, in the first class, the *simple bilious fever* of Stholl, the *bilious autumnal remittent* of Cullen, the *meningo-gastric* of Pinel, which changes easily into putrid, particularly during the prolonged heats of summer. It is characterized by a lazy weariness, (*lassitude spontanée*)

tanée) by vague pains, or *dédolations* in the members, by a sense of weight, of tension, or of pain in the epigastrium, the head-ach exclusively affecting the frontal region, over the orbits; by the yellowish clamminess of the tongue, nausea, desire to vomit, the loss of appetite, and by a pulse which, although varying, from the difference of constitution of the subject, or from the period of the malady, keeps up, in general, during almost the whole course of the disease; lastly, by a heat which, much less ardent than in the inflammatory fever, gives to the hand, the sensation of something acrid or pungent.

In the second class, are placed the fevers termed *low nervous*. These fevers, which are often met with simple, and without contagion, present, notwithstanding, in many cases, a particularly malignant character, owing, for the most part, to previous derangement of the sensibility, or, to a deteriorated state of constitution of the patient.

Considered in its simple state, the low nervous fever most frequently presents itself, under the form of a catarrhal fever, during the humid atmosphere of autumn or winter, its symptoms

symptoms are, a vague head-ach, a sense of muscular debility, pains of the limbs, resembling those of rheumatism, an aggravation of the paroxysms towards evening, the tongue moist, and loaded with a whitish covering; sometimes, however, we find it dry: very often, indications of gastric disorder, nausea, vomiting, and deprivation of appetite, &c., are added to these symptoms, and then it is, that this fever is termed *catarrhale gastrique remittente.* It is this character which constitutes the fever named by Pinel *adeno-meningée,* and *rheumatique* by Stholl, as seeming to have its seat especially in the mucous system.

But, when the exciting cause (*cause déterminante*) of this fever, which, according to Cullen, is the action of cold, is found complicated with a sedative principle, whether epidemic or contagious, thence results a fever, which develops symptoms of this double origin; this is the *low nervous fever* of Cullen and of Huxham, the *pituitoso-adynamique* of Pinel, or the *nervous putrid catarrhal* fever of Stholl.

This fever presents a great variety of phenomena, according to the part of the mucous membrane

membrane affected; it is thus that, in divers parts of the body appear erythematous phlegmasiæ, the cynanchies, the dysentery, the secondary peripneumonies, the different eruptions, the erysipelas, the scarlatina, &c. which present a more or less malignant character, and the curative indications of which are, in general, very difficult to seize.

It is in the order of fevers *pituitoso-nerveuses* that Professor Pinel appears to range all the species of intermittent fever, without excepting even the quartan. It is true, that we often find intermittent fevers of all kinds combined with fevers essentially of this class, thus giving rise to those formidable complications, which are called malignant hemitritæi, and which seem to be owing to the combined action of miasmatic and contagious principles; but, I must still think that there is an essential and total difference between the intermittent, and pituitous remittent fevers, in this, that the former are by no means contagious, and that their symptoms should be regarded, rather as the effect of a primitive derangement in the nervous system, than as an affection of the mucous membrane.

The

The third class is composed of fevers, properly called *putrid or adynamic*, which I consider, with Cullen, as generally contagious, and which, with Stholl and Pinel, I have repeatedly met with complicated, as well with those of the preceding, as with those of the following class; which may account for the little uniformity we find among authors, in their descriptions.

These fevers generally occur in autumn, during warm and moist weather, and owe their origin to an epidemic and contagious principle. Among their exciting causes (*leurs causes déterminantes*) are ranked, misery, filth, sorrow, sudden changes of the atmosphere, cold moisture, fatigue, depravation of the air, of the food or drink, in fact, the whole catalogue of enervating and sedative agents.

When we consider the putrid fever in its simple state, and quite free from complication, we easily find, in its progress, three very distinct periods: that of the contagion, that of the development, or reaction, and lastly, that of the degeneration, or decline.

In the first period, there evidently appears,

lesion

lesion and oppression of the vital powers, and of muscular irritability, characterized by prostration of the strength, languor, dejection of the mental and corporeal energy, weakness of the pulse, sensation of weight of the head, stupor, vertigo, &c. These symptoms, in a manner fore-runners of the disease, last a longer or shorter time, according to particular circumstances, and until the arterial reaction appears in the febrile state, which commences with the second period; then, although hitherto, all the symptoms of depression of cerebral energy exist, there arises a new series of phenomena in the circulating system, a burning and pungent heat is observable, as well to the touch, as by the sensations of the patient; the features are red and enlarged, the eyes are variously affected, sometimes red and as if inflamed, sometimes weeping, sometimes dry, occasionally dull; the pulse is, in general, harder and more marked (*plus developpé*); to conclude, a remission appears daily, or every second day.

In the progress of the disease, another order of symptoms supervene, which, according to Stholl, Cullen, Tissot, and most moderns, is to be attributed, partly to degeneration of the humours, and partly to lesion of the irritability.

lity. This third period is indicated, by extreme sinking of the strength, fœtid breath, muddy urine without deposition, (*jumenteuse*) putrid degeneration of the excretions, blackness of the tongue, of the gums and teeth; by hæmorrhages, petechial eruptions, &c. &c.

The fourth class comprehends the malignant fevers. I mean by the expression *malignant*, that fever in which, from the very nature of the disease, the vital energy is diminished from the first appearance, and which consequently presents phenomena of a solemn cast, peculiar to itself, whether there may be complication or not. It is this fever, which the celebrated Pinel has designated *ataxique*.

They are particularly characterized, by their attacking the sensibility and irritability so deeply, that nature, oppressed in her essence, cannot, with regularity, employ her means of reaction: we see nothing, during the whole course of the disease, but symptoms of confusion, of disorder, and of extreme dejection. Complete failure of the loco-motive powers, vague horripilation, sometimes, insensibility, at others, rigidity of the muscles, tetanus, episthotonos, symptoms of serious injury of the animal

animal functions, aphony, anxiety, pusilanimous and panic fear, unconscious sadness, slight, yet evident alienations of mind, loss of memory, carus, coma, &c. shew themselves from the first, in the truly malignant fever. These fevers are so obstinate, that Stholl did not hesitate to declare, that they were not to be cured by the efforts of nature, without the assistance of art.

Nevertheless, this malignity admits of different degrees, according to the activity of the exciting cause, the disposition of the subject, or the various complications; thence, the greater or less severity of the symptoms, thence, some extraordinary phenomena, arising from some particular causes, and which proceed simultaneously with those of the malignant fever; it is thus, that amidst all the symptoms of debility, we sometimes observe an elevation of the nervous influence (*l'action nerveuse*), an astonishing agility of all the muscles (1). In such cases, where the cerebral organ is particularly affected in the course of the disease, may we not sometimes reasonably suspect there, a secondary inflammation?

(1) Stholl. Aph: de febr.

The malignant fever may be mitigated, and proceed more mildly, when its causes, less sedative in their nature, affect subjects of a weakly constitution, in a debilitated state, and therefore disposed to chronic nervous affections; it is under these circumstances, that this fever is classed among the *low nervous typhoid* of Cullen.

Amongst the species of malignant fevers, arising from more active, or variously complicated causes, I think it will be sufficient, for particular purposes, to point out the following.—

1st. The malignant fever properly so called, or, the malignant nervous fever, in which, from pre-existent debility of the subject, without other complication of the morbific cause, the whole series of symptoms are exclusively concentrated in the nervous system.

This, pretty similar, in other respects, to the simple low nervous fever, differs from it however, in being more acute, and in its phenomena bearing the character of a greater degree of debility. I have frequently met with this disease at the military hospital, in soldiers previously

viously affected with nostalgia, and with whom, the simple low nervous, was suddenly converted into the acute malignant nervous fever, to which they generally fell victims.

2nd. The catarrhal malignant fever. This disease, appears to be owing rather to the peculiar nature of the exciting cause, than to the primitive disposition of the subject, the principle of malignity being combined with the catarrhal affection, it thence follows, that at the same time that the former attacks the nerves, the latter excites, in some organ, an erythematous inflammation; hence arises the double series of symptoms, of the malignant fever, and of those of the peculiar affection of the mucous tissue.

To this kind are allied, the malignant catarrhal, anginal, erysipelatous, pleuritic, peripneumonic and dysenteric fevers; all diseases which, on account of the complication, and of the unfortunate coincidence of depression of the vital energy, with partial inflammatory irritation, have great tendency to terminate in gangrene. Let me here give an example of it.

Peter Herman, aged forty-five years, a school-master at Ghent, of an irritable bilioso-sanguine

sanguine temperament, returns from the promenade on the evening of the 25th March, of the present year, and complains of great lassitude, of a slight pain in the throat, a little cough and a particular anxiety ; he passes a restless night; the anxiety increases, with a difficulty of breathing ; the upper lip becomes very painful, swells, and becomes of a dark colour. On the 26th, Mr. Verbeeck, a Surgeon, is called, he considers this lip, so swelled, so painful, as the principal source *(foyer)* of the disease, and applies to it some leeches, which produce little or no relief. I saw the patient on the 27th, and found him in a state of extreme depression, but collected, and without head-ach ; the countenance, however, was redder than natural, the lip was still very much swelled, but less painful ; the tongue clean, but rather dry, a slight difficulty in deglution ; the respiration somewhat difficult, and more hurried than ordinary, but without pain ; a small cough ; heat of the body augmented, but by no means ardent ; the pulse regular, very frequent, but rather soft than hard : not the least gastric complication.

In this state of things, and taking into consideration the pretty robust constitution of the patient, his age, the spring season, the cold, dry

dry and elastic state of the atmosphere, I ordered a bleeding from the arm, and carried the evacuation to ten ounces: the blood, somewhat thick, shewed the inflammatory crust: some slight relief was produced from the bleeding. After dinner on the same day, observing that the anxiety had increased, that the pulse had become more accelerated, although still full and soft, I ordered a second bleeding, but with every possible precaution: the blood appeared less tenacious, and without crust. Two hours afterwards, the patient suddenly complained of an insufferable pain in the loins, the pulse became still more quick, but now, for the first time, weaker, and the patient became delirious; urged by the violence of the pain, he sprung out of bed, and instantly expired.

3rd. The gastric, or bilious malignant fever. Amongst the vast number of diseases produced in autumn, from the bilious constitution, this fever is very often observed. Its whole malignity appears to depend, solely upon the particular disposition of the subject which it attacks: the symptoms of gastric affection readily present themselves, intermixed with those of the malignant nervous fever; sometimes preceding them. The following is an example of that sort.

sort. N. a scrivener, aged twenty-four years, of a weakly constitution, very sensible, and abandoned to masturbation, returns home trembling with cold, after a debauch. Having passed a very restless night, he complained of bitterness in the mouth, nausea, head-ach, a sense of weight in the epigastrium, and extreme lassitude of the members; I found him with a pale countenance, a feeble and doleful aspect, vacillating limbs, the pulse accelerated and weak, the urine natural.

I prescribed an emetic, which gave some relief; the following night, he slept at intervals, two hours. On the third day, I found the functions of the nervous system pretty nearly in the same state, but the gastric symptoms mitigated; a diarrhea came on, which relieved the patient; I gave him some tincture of rhubarb, with the acetated water of ammonia. The fourth day, in the same state: the pulse and strength good, the diarrhea continued; the fifth day, worse, and in sullen delirium; sleep interrupted, the diarrhea persists.

From the sixth to the eighth day, in the same state; I ordered a vinous decoction of bark with some honey: diarrhea continues.

On

On the ninth day, he was attacked with considerable deafness, and a comatose state succeeded the delirium; the strength got up a little, diarrhea diminished.

The tenth, eleventh and twelfth days, continued better; the diarrhea ceased spontaneously and gradually.

The patient continued to improve, and in twenty-eight days, arrived at a state of perfect convalescence.

4th. The putrid malignant fever. This fever, of which authors have formed so many particular species, under the terms hospital, goal, ship and camp fevers, is always recognised as extremely formidable, from its insidious progress, and from its peculiarly malignant character. I term it *putrid malignant*, because it appears to me to be owing, in fact, to the complication of these two characters. We know what affinity it has to the putrid fever, whose exciting causes it also acknowledges, and all the difference may be accounted for, from the concomitant circumstances, and particular dispositions of the subjects affected. It is thus, for example, that the hospital fever, like

like every putrid fever, is more or less obstinate, more or less varied in its symptoms, according as it is found complicated with any prevailing endemic, or epidemic disease, as I have frequently observed it. During the autumn of 1809, and the early months of 1810, I remarked it accompanied by paludal intermittent fevers, which the sick had brought from the marshes, and united, at the beginning of the following winter, to catarrhs, and gastric affections of all kinds, which the heat of the preceding summer had brought into action.

With respect to the influence of particular dispositions in this disease, Cera (1) makes some observations, which I have constantly found to be correct. He has always remarked that voracious men, and those addicted to excess in wine, are more readily, and more severely attacked by it, than timid persons; those given to venery, or men of letters, with intense application, rarely escape from it, and never without great danger. Indeed, last year, many of my students, who had to perform duty in the different military hospitals, were attacked by this fever, and I lost the most studious among them, all the

(1) De morb. nosocom.

rest

rest escaping it. The same author asserts, on the other hand, that subjects, naturally hypochondriacal, are always exempt from it; and, supporting this assertion in his own case, he says, that being of that temperament, he has frequented hospitals during twenty years without ever contracting this disease. Being myself also of the same constitution, I can add, that during fifteen years, and in various hospitals, I have likewise treated, with impunity, thousands of patients.

Although the putrid malignant, or hospital fever, may present itself under many forms, it is necessary to pay particular attention to the following species, because they occur most frequently, and their consideration may be sufficient, for a knowledge of all the others of the same class.

The first of these species shews itself, whilst, during the prevalence of putrid fevers, the contagion strikes subjects who, although otherwise of very good constitution, have been previously debilitated by chagrin, fatigue, want of proper nourishment, or other similar causes, to which soldiers are particularly exposed. In those cases, the vital powers, already enervated,

enervated, cannot repel the deleterious agent; yielding from the first assault, they allow the putrid ferment *(levain putride,)* to vitiate the products of each secretion, and to present symptoms of putridity, joined to those of debility; a concurrence of causes, the respective proportion of which, forms the individual character of the disease *(a)*.

This

(*a*) *Delpech* has made some valuable remarks on this subject, see *Delpech sur la pouriture d'hospital*, also Delpech précis élémentaire des maladies réputées chirurgicales, tom. 1. p. 123.

In the hospital fever, which prevailed among the wounded after the Battle of Tallavera de la Reyna, in 1809, I had occasion to observe several circumstances, which tend to confirm the opinion of the above author, with respect to the local and infectious nature of the hospital gangrene. Lieut. Col. A. 66th. foot, (a man near 60,) had a musket ball passed through the fleshy part of his thigh, about the middle, and close behind the femoral artery; the wound went on well, the slough was thrown off in the usual time, his health was good, and the wound was in the best state, when it suddenly became pale and greasy looking, the edges thin and abrupt. and the circumference of each orifice rather hollow than prominent; the discharge almost ceased, and there was more the appearance of a cicatrized transit through the limb, than of a recent wound; his general health was still good, but, in a few days, his appetite and sleep became impaired, his mind wandered, he became lazy, stupid and insensible, sunk gradually, and died.

Later

This species is announced, in general, by alternate fits of heat and cold; then follows trembling of the limbs, an extreme sinking and weakness, weak pulse, delirium, petechiæ, fœtid diarrhea, and other phenomena infinitely variable, according to the divers circumstances and complications above explained. Such is the true putrid malignant fever.

We refer to the second species, the malignant remittent fevers, which, in their varied forms, constantly present the character of malignity, which we have sketched above, and which, at

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Later experience has thrown considerable light on the nature and treatment of this disease; we had it, on the occasion alluded to, upon a grand scale, and under aggravated and complicated circumstances, it interfered, very frequently, with our operations, and, with our then limited knowledge of its *local* nature, and appropriate *local* remedies, and our still more limited means, not only of medical or surgical treatment, but of the commonest existence, it thus became a most destructive disease; I may remark, however, that I found the *flap operation*, when practicable, succeed better than the other, and I had there, and elsewhere, repeated opportunities of trying both, under very similar circumstances. I first adopted it on the occasion alluded to, upon one principle on which Mr. Lawrence recommends his new ligature for arteries, in the same disease, viz. quick and *perfect* union by the first intention, though at that time, with reference only to the constitution.

the

he same time, disguises itself under the mask of cholera morbus, of dysentery, or of any other atonic disease.

A third species comprehends the fevers, apparently remittent, which we observe particularly in the autumnal putrid constitutions, (*dans les constitutions putrides automnales,*) and which are, in their nature, really intermittents. They owe their origin to marsh miasm, and take their symptoms of remittent continuity, from their complication with the putrid constitution. I have met, and treated this fever very often, among the military returning from the island of *Walcheren*. It presents all the symptoms of nervous debility, with evident exacerbations from day to day, without the least sign of putridity. Neither is it, of itself, by any means contagious, and it appears to consist in a simple deviation from the intermittent paludal fever These fevers are easily subdued by the Peruvian bark. (*a*)

(*a*) The success of bark in the remittent, as well as in every other species of fever, must be greatly influenced by the state of the circulation, and of the hypochondriac organs of digestion; if the former be unequal, or, if the latter be full, bark, unless acting as a purgative, will do no good.

The

The fourth species of remittents, is that where the putrid infection, connecting itself with the intermittent marsh fever, thus forms very fatal double tertians. I have observed this species in many patients who, coming into hospital with a simple intermittent, were subsequently struck with the contagion, and in whom this intermittent, forthwith changed into the putrid remitting continued form, (*en continue remittente putride*) with all the symptoms of debility and of degeneration. It particularly requires the bark; I have never found in it a true indication for bleeding, either local or general.

The remittent fever of the fifth species, entirely differs from the preceding ones, and should be completely and carefully distinguished from them; it takes its origin, not from the marsh miasm, but from contagion alone, and, though it may present febrile paroxysms, somewhat periodical, it is only at its commencement, when it has not yet become perfectly formed. It is this which has been sometimes taken for the malignant intermittent fever, and which, like it, has been vigorously attacked with tonics and bark; but this practice, which never succeeds, has very often produced fatal consequences.

consequences. We quote on this head a beautiful passage from Cera: "I observed in the "hospital," says he, "a very remarkable circum-"stance, which surprised all our young prac-"titioners. During the few first days, the "disease appeared to consist of very distinct "febrile paroxysms, most frequently perfectly "periodical, beginning with cold, and terminat-"ing in sweating, with brick coloured urine. "Nevertheless, taught by experience, I must "assert, that the Peruvian bark, in whatever "dose, did not here produce any salutary effect; "and, on the other hand, if we follow the "regular progress of this fever, we shall see it "change from the intermittent, as it appeared, "into continued fever, sometimes very danger-"ous, but terminating, for the most part, in "convalescence." This prognosis is truly admirable; I have seen it almost always verified.

The great point here then consists, in properly distinguishing this, from the preceding species, which will not be at all difficult to the experienced physician, when he directs his attention to the procatarctic causes, to the putrid character of the disease, to the simultaneous existence, or non-existence, of the intermittent form, as well as to the particular symptoms, observable in its later periods, which are, for the most

most part, similar to those of the putrid synochus. This last is attended with more ardent heat, a drier tongue, redness and inflammation of the eyes, connected with some symptoms of malignity, whilst, in the species under consideration, the signs of nervous debility are developed from the commencement, and predominate during its whole course.

There is still, another species of malignant putrid fever; it is that which is found complicated with, or formed by, a catarrhal affection. This very common disease, frequently presents some exceedingly insidious and equivocal symptoms. Nothing is more difficult sometimes, than to determine here, upon the employment of bleeding, above all when, at the commencement of the disease, we find, at the same time with an inflammatory state, symptoms of debility. In general, when this fever is accompanied by a little cough; by a stich in the side; by a frequent pulse, small, but somewhat hard; by great head-ach, with redness of the face; by dryness of the tongue, which becomes of a red colour, inclining to dark; when the subject is pretty robust, and the febrile action is directed towards important parts, I think we may prudently institute a sparing evacuation of blood.

As

As every thing here depends upon the exact distinction, of the putrid catarrhal hospital fever, from the simple catarrhal fever, I have thought it of use to retrace the distinguishing symptoms which Cera gives of it, and which will contribute materially to the diagnostic. "The former is characterized by cons derable "loss of strength, whilst the febrile action is "but slight; the train of catarrhal symptoms "are concentrated towards the chest, or towards "the primæ viæ, and resist the usual remedies. "In the benignant catarrhal fever, on the con-"trary, the symptoms are milder, less obsti-"nate, and the weakness is always propor-"tioned to the degree of the fever. The ma-"lignant nature of the hospital disease is fully "revealed, when, upon the third or fourth day "from the attack, petechiœ shew themselves; "then, we observe the antecedent symptoms "of inflammation, disappearing insensibly, "whilst those of the catarrh, and of the gastric "affection, remain; in fact, about that period, "the more remarkable symptoms of putrid "malignant fever, break forth simultaneously, "such as, stupidity, carus, comatose watchful-"ness, fœtidity of the excretions, tympanites "(*météorism*), &c., which continue to increase, "particularly if the diarrhea be arrested, whe-"ther spontaneously or by remedies."

 This

This description proves to demonstration, that, if ever it may become necessary to have recourse to bleeding, in the putrid-catarrhal hospital fever, it must only be in the first stage, and, if later, it will be always disastrous.

Having now pointed out the principal species of putrid and malignant fevers, the knowledge of which, is of much importance to medical practice; then, having treated of their distinctions, and having drawn, from considerations on the nature of these diseases, some general indications for, or against bleeding, it may not be improper to support this doctrine, by the opinions of some practitioners, who have most illustrated medical science.

SECTION SECOND.

Opinions of ancient and modern Authors, upon the use of Blood-letting, in Febrile Diseases.

ALTHOUGH we do not find, in the writings of Hippocrates, all those precise distinctions which modern nosologists have established, in the doctrine of acute diseases, the curative method which he taught, tends, however, to the

the same end, viz, to arrest, or moderate the re-action of nature, in its excessive development.

That philosophical observer had perceived, that hæmorrhages, such as those from the nose, at the commencement of fever, were salutary, either when the vital powers were too much raised, or, when severe pains, or difficult respiration, accompanied the fever: he found them very useful in local affections, of an inflammatory nature, and he thence concluded, that, if these symptoms subsisted during a certain time, without the increased circulation producing a spontaneous depletion, it would be necessary to substitute an artificial evacuation, to prevent the disordered and too impetuous action, from derangeing any of the vital parts. Further, we do not any where find that Hippocrates employed bleeding, except when the fever was too violent. The only rule he has transmitted to us upon this subject is, "that it is hardly "ever necessary to practise blood-letting, but at "the commencement of the disease, whilst the "fever is violent, and the patient in the prime "of life, and of a robust constitution. (1)

The antients, who followed the method of

(1) Hipp. de Victus ratione in morb. acut.

Hippocrates,

Hippocrates, prescribed bleeding then, at the commencement of fevers, or other acute diseases, only with the express intention of diminishing the inordinate action of the vital powers, or, of diverting from any of the vital parts, an impetuous motion of the humours, which might endanger them, but by no means for the purpose of imitating a natural crisis, as some have wrongly interpreted; Hippocrates must have been very far from placing entire confidence, either in blood-letting, or nasal hæmorrhage, since, out of forty-two cases which he reports among his epidemics, he cites but two, in which critical hæmorrhage produced a perfect cure.

By as much as the Father of Medicine was prompt in bleeding, at the commencement of fevers of an inflammatory nature, when the vital powers went beyond the ordinary limits, by so much did he rigorously abstain from it, in what are called bilious and putrid fevers, even when accompanied by pleuritic pain; in such cases he thought it absolutely hurtful. (Coac. prœnot. sect. 2.) If, in the commencement of the fever, termed ardent, the patient complains of bitterness in the mouth, and that the tongue should be charged, Hippocrates thought blood-letting dangerous, and prescribed, in

in preference, an emetic, (De ratione victus in acutis.) The venerable old man thought, that, in that class of diseases, the whole mass of blood contracted a kind of corruption, by blood-letting, which appears to have induced Prosper Martian to say, "blood-letting, for the purpose "of curing fever, is generally hurtful." We shall hereafter see, in treating of affections of the chest, in putrid fevers, how far this rule is to be admitted.

Hippocrates has also left us some precepts, concerning the use of bleeding in fevers, more particularly, respecting the difference of climate. In general, he forbids it in hot countries, in the treatment of the same diseases, in which he recommends it in colder regions: this was also Galen's opinion, who, living in a more northern latitude, was less reserved upon sanguineous evacuation.

I might here accumulate many other authorities to prove, that bleeding was formerly administered, only with the sole intention, of removing the excessive reaction of the fever; but presuming that those already given, may be sufficient, I proceed, having pointed out the method of the Creator of the science, to that of his worthiest emulator, the illustrious Sydenham.

Animated

Animated by the same genius, they both viewed, as if with the same eyes, the animal œconony in the state of health, as well as in that of disease; both knew how to observe, and to follow, the admirable laws of nature; both, directed by observation and experience, seem to have learned, from them alone, the same curative method. Although then, the theory of Sydenham presents some dissimilarity to that of the ancients, his practice, in the use of bleeding in fevers, perfectly coincides with that of Hippocrates.

The first precept which he gives us, is found in his History of the epidemics of the years 1667, 1668 and 1669; it is there that he controuls the progress of the disease, so that, on the one hand, it shall not give rise to dangerous action, whilst, on the other, it may be sufficiently strong, to surmount the morbific cause. His maxim then was, "that it is necessary to "administer bleeding, to repress the tumultu-"ous and irregular motions of nature."

In the fever which he calls depuratory, he begins by this evacuation, for the purpose of moderating its excess; but he affirms that, in the same disease, this remedy cannot be put in practice, except with some robust subjects, and never

never in weakly people: further, he prescribes blood-letting in local inflammations, for the purpose of diminishing the violence of the symptoms, of the pain and of the fever; however, he, at the same time, remarks, that local inflammations occur, some epidemical pleurisies, for example, in which bleeding can hardly be once practised, and never should be repeated.

In this particular, the practice of Sydenham is exactly that of Hippocrates, and of all the antients.

A second object, proposed by the English Physician, in adopting blood-letting, was, a revulsion of the blood, from the part affected, or from an essential organ, to which the febrile impulse had particularly determined it. He had recourse to this operation, even when there was nothing inflammatory in the nature of the disease, admitting that, in other respects, the strength of the patient allowed of such depletion. It was thus that he adopted this practice, in a hysterical cholic, which presented signs of plethora, and in a dysenteric fever, where the degree of irritation of the intestines, made him dread a determination of blood towards these viscera, already so sensible.

On the other hand, he condemns blood-letting in the scarlet fever, at the period of efflorescence, because, he then dreaded the retropulsion of the morbific matter, towards the internal organs. In this disease, as well as in every other of the same species, he placed all his hope, in the expulsion of this matter by the cutaneous emunctories.

The opinion of this celebrated author, upon the quantity and repetition of sanguineous evacuation, was not always the same; he candidly avows, that, "in his youth, he was prodi-"gal in blood-letting, but, taught by later "experience, he afterwards used it more mo-"derately." He has left us, in short, this excellent lesson: "In fevers, accompanied with "rheumatic pains, even acute, we must be "careful, in the wish of prosecuting blood-"letting so far, as to remove the pains, or the "fever: too often," says he, "such unhappy "efforts lead only to the grave."

See also his History of the Epidemic of 1673, 1674 and 1675. Although in that epidemic, the remittent fever was frequently accompanied by violent head-ach, and pleuritic pains, and the blood taken from a vein, shewed the inflammatory

flammatory crust; he openly affirms, that bleeding had been there prejudicial, because the disease was of a putrid character.

It appears to me, however, that Sydenham has established too general a rule for epidemical diseases; above all, for fevers of every kind, when he thinks we should never purge, at the commencement of a disease, without a previous bleeding. "I hold it," says he, "as a principle, never to solicit stools, previous to having "let blood; and, in epidemics, of whatever "kind they may be, we should rigorously abstain from opening the bowels, at least until "a bleeding shall have been premised." (1)

These precepts are much too general; they are out of the question in putrid and nervous fevers; and are inapplicable, except in cases, where bleeding and purgatives are indicated at the same time; that is to say, when a too strong reaction, or a dangerous deviation of the vital powers is to be dreaded, and when, at the same time, we find symptoms of colluvies, *(d'une matiére mobile)* tending to be thrown off by stool. In this occurrence, we must not neglect

(1) Sydenham Epist. Respons. p. 304.

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the very judicious advice of the celebrated Stholl, to examine attentively, whether the disturbance, which we attribute to the extent, or to the wrong direction of the circulatory impulse, may in no way depend upon an accumulation of irritating fœces, of which it might be necessary to free the digestive canal; a research, the principles of which will be found, in the nature of the disease, in its various symptoms, in the constitution and temperament of the patient, as we shall have an opportunity of bringing under observation hereafter.

Let it be sufficient, at present, to have shewn, that two physicians, seperated by an interval of so many ages, and notwithstanding all the diversity of their theories, but both conducted by the observance of nature, to similar results, have given the same directions on the practice of blood-letting, and have administered it for the same purposes.

Passing then to the practitioners of a second order, we still see them following, very nearly the same method. Thus, Areteus, Celsus, Glass, Bianchi, Fernel, de Gorter, Junker, Huxham, Tissot, &c. condemn, in general, all bleeding for

for the fever itself; and Aetius (1) and Paul Eginetus (2), who, among the Antients, most employed this remedy, confined its use to the simple synochæ, and forebade it in the putrid: we may read, also, what Salius Diversus (3) has written, with equal accuracy and prolixity, on the dangers of sanguineous evacuation in this species of diseases.

Van Swieten is one of the moderns, who may have best judged on the utility of blood-letting; he strongly condemns its employment in malignant fevers, particularly in the hospital fever, (4) whilst he thought it sometimes useful, and even indispensible, in the putrid fever, where the subjects are young and robust. (5) This doctrine has been followed by Lieutand, Heister, (6) Octavius Neruccus, (7) and by a crowd of others, more or less celebrated.

One of the most determined partizans of

(1) Tetrabibl. 2, serm. 1, cap. 78.
(2) Lib. 2, cap. 3.
(3) Lib. 2, cap. 21.
(4) De Mor. Castror. Edit. belgic. p. 89.
(5) Comm. in Aphor. 619, T. 5, p. 313.
(6) Compend. Medic. Pract. p. 53.
(7) Hist. febr. epid. Senens. anno 1766, 1767 et 1768, p. 18 et seq.

blood-

blood-letting, was the famous de Haen; (1) and, notwithstanding, after having prescribed this remedy, even in the debility which is observed in malignant fevers, he revokes, in some degree, his own sentiment, in saying, (2) "However, "it [bleeding] will be useless, and even hurt-"ful, if the debility proceeds from a putrid "dissolution of the humours, or from depraved "matter, stagnating in the *primæ viæ*."

If the learned Huxham has, at any time, appeared to advise blood-letting in putrid diseases, he is not less given to the general opinion upon it, when he has declared, "that he employed "it, only to diminish too great determination, "upon any important part, and thus prevent "phrenitis, pneumonia, or any similar evil."(3)

Amongst those who appear to have been best acquainted with the true indications of bleeding, in putrid fevers, we must rank with the first, the excellent observer Stholl, who distinguished in these fevers, the particular species of *putrido-inflammatory*, and *nervoso-inflammatory*; and, as his opinion almost entirely coincides with that of the

(1) Ubiq. reât. Medend.

(2) Part 3, pag. 37.

(3) Essai sur les diff. esp. de fiévres, p. 124—26.

celebrated

celebrated Cera, I shall here quote a fragment of the latter author: "In general," says he, "all kinds of putrid or hospital fever, contra-"indicate, of themselves, blood-letting, which, "by wasting the remaining strength, by hin-"dering, or suppressing the critical evacuations, "may greatly prolong the disease, give rise to "some chronic affections, cause some serious "detriment to the vital parts, or, in short, lead "the patient to his ruin."

He afterwards adds: "It is of great impor-"tance, in acute fevers, to distinguish perfectly "the essential character, from that which is "but accessory, and to ascertain, whether it be "the inflammatory, or the putrid diathesis "which predominates in the disease; for the "hospital fever presents itself, very often, par-"ticularly in its first period, under the deceit-"ful inflammatory form; however, if we pay "attention to the preceding signs, particularly "to the gastric symptoms, to the decline of "the strength, as well as to the period at which "the disease becomes developed, the diagnostic "cannot be very difficult. We recognise the "inflammatory character in the putrid hospital "fever when the epidemic, to which the hos-"pital contagion is joined, is itself of an in-

"flammatory

" flammatory nature; when, from the first ac-
" cess, the fever is violent, that it presents some
" symptoms of inflammation from its com-
" mencement, and, that the vital energy is
" much less reduced, than in the ordinary hos-
" pital fever. It is necessary always to hold in
" view, that diseases which are developed in
" hospitals, even those which have a character
" of inflammation, easily degenerate into pu-
" trid, and, as such, should be treated more
" rarely by bleeding."

We have distinguished the principal species of putrid and malignant fevers; we have seen that all, by their own nature, generally contra-indicate blood-letting, but, that notwithstanding, some admit it under particular circumstances; we have, in a few words, retraced the opinions of the most illustrious antient and modern practitioners, upon the use of this remedy; it now remains for us, to particularize the peculiar signs, which indicate, or contra-indicate it, in those fevers; this is the part of our labour, which answers most directly to the question proposed, and it is not, at the same time, the least intricate, for, of all the signs, there is none, which furnishes, of itself alone, an absolute indication, none, which may not de-

pend upon various causes, sometimes of an opposite nature, none, in fact, the indication from which, may not be influenced by circumstances more or less varied.

We proceed, then, to treat of each of those symptoms in particular, we shall attempt to determine their nature, and to point out the cases in which, from their cause, their connexion with other symptoms, the period of their appearance, &c. they call for, or forbid blood-letting, this method will have, we know, the inconvenience of drawing us into some details, but, writing for practitioners of all classes, we have preferred the real merit of being of general utility, to the fascination of conciseness.

SECTION THIRD.

Of the Symptoms which Indicate, or Contra-indicate Blood-Letting, in particular.

§ I.

Of Febrile Heat.

AN extraordinary heat, says Boerhaave, denotes, either a *thickening of the humours*, or, an *acceleration of their motion*, or else, a *constriction, and strong reaction of the extreme vessels*, or several of these states together.

It is true, that elevation of the temperature of the body in fevers, is, in general, an indication of the development of the vital powers, which frequently furnishes an indication for bleeding; but this symptom, in nervous and putrid fevers, even when accompanied by a full and strong pulse, may often be only a very faithless guide.

Amongst

Amongst the circumstances which must here assist the judgment of the physician, the principal is, that of the period of the disease, at which the appearance is observed. If, from its commencement, and in strong and robust subjects, we find increased heat, together with a hard pulse, violent head-ach, or any other symptoms of irregular impulse, bleeding may very often become necessary: if, on the contrary, at a more advanced period of the disease, when the *vis medicatrix* has arrived at its highest pitch, the temperature still increases, the pulse becomes more full and strong, there is then reason to believe, that the disease will terminate by sweating, and, in this case, an imprudent bleeding might pervert the salutary operation of nature. I think it will not be here amiss, to quote from the celebrated Glass, the symptoms of an approaching crisis by sweat: "A "considerable, but not burning heat, pervades "the whole body, even to the most extreme "parts; the skin, previously constricted, be"comes yielding and soft: the tendons at the "wrist are less tense to the touch, and the "tongue begins to moisten; but the peculiar "and certain sign of that crisis impending, is "the full, soft, and strong pulse; it at the same "time denotes, that the humours are prepared

" to pass off by the pores, and that these last
" are so disposed, as to afford them a free passage."

All observers have contemplated, as one of the characteristic symptoms of the putrid synochus, that biting, or pricking heat, which gives a sensation of ardor, to the fingers of the physician feeling the pulse; a sensation which I have repeatedly experienced, *(mille fois)* and which may be easily distinguished from every other.

This symptom, which never appears at the commencement of the fever, but which arises during its course, and is accompanied by a hard pulse, indicates, much less, the inflammatory diathesis, than a peculiar irritation, which the contagious and putrid principle exercises upon the arterial system; and in this case, if otherwise there are no symptoms requiring blood-letting, if the vital organs are in no way affected, if there is nothing like a particular determination of blood, then, certainly, bleeding must only break down the strength, and hasten the death of the patient.

This symptom was known to the antients, and particularly to Galen, who, describing it circumstantially,

circumstantially, compares the irksome sensation which it communicates to the fingers, to that which smoke exercises upon the nostrils, and correctly remarks, that it is only observable at an advanced period of the disease.

Sometimes, this heat occupies only the internal regions, and the surface is colder than in the natural state: these are the fevers which Hippocrates named lepirian, *(leypiriennes)* and which Galen describes as a pernicious kind of ardent fever. This unequal distribution of chaloric, occurs only at the highest pitch of the disease; it announces the total decline of the vital energy, and very often, the approaching gangrene of some internal organ: blood-letting, even local, would then be altogether inadmissible.

The original seat of the disease, or the organic system affected, should further assist us in the indication from febrile heat: thus, in that species of putrid fever, where the mucous system is primarily affected, and which has been termed *gastrico-adynamique*, *putrido-bilieuse*, *putrido-mucoso gastrique*, or *mesenterique*, with Baglivi; the heat is occasionally found augmented, the skin reddish,

thirst,

thirst, the pulse a little hard, as in the synocha. If, in this case, we at the same time meet symptoms of colluvies, whether upwards or downwards, all incertitude ceases, and we should by no means employ bleeding; but if, that state existing, the heat be considerable from the beginning, without any symptoms of colluvial evacuation; if the subject, besides, is robust; if the abdomen becomes painful, if there arise there colic, or dysenteric tenesmus, a bleeding at the commencement will be very useful, for, with these symptoms, the increased heat denotes danger of inflammation in the abdominal viscera.

I have said, we should observe this heat, from the commencement, for, should it appear, even with the whole train of symptoms above described, but in a more advanced state of the disease, we should by no means use *depletion*, allowing at most, only a topical bleeding: "Let not the increase of exterior heat, or "violent head-ach, by any means induce you "to employ bleeding." Quarin justly says, in speaking of the dysentery; "for, that orgasm "produced by the putrid diathesis, so completely counterfeits the inflammatory state, "that it sometimes deceives the most able "physicians."

In

In typhus, or putrid nervous fevers, an augmentation of heat may proceed from spasm, and therefore, also, not indicate blood-letting. We recognise this state from the concomitant symptoms; the skin is tawny, (*hâlée,*) arid, contracted; the tongue is dry and rough; there is thirst, and diminution of all the secretions; the urine is bright, and a little high coloured; the bowels are generally constipated, at least when diarrhea is not connected with the prevailing species of disease. As long as these are the only remarkable symptoms, the presence of a more or less augmented heat, should not decide us upon opening a vein; but if, whilst the disease is yet in its first period, and the strength holds good, there supervenes a particular affection, such as a violent head-ach, or a determination towards the chest, a bleeding may then be allowed, but never without the greatest prudence; a topical depletion, most generally being sufficient in these cases.

§ II.

Of Head-ach.

THIS symptom, is one of the most constant of all we meet with, in putrid and malignant fevers; there are few patients who do not complain of it from the attack, and during the course of the disease, as long as they can give any account of their sensations. An infinity of causes give rise to cephalalgia, which therefore may be divided into many species; but we shall here only treat of those, which more immediately belong to the fevers, forming the object of this memoir; of those more particularly, the consideration of which, may have a direct influence upon the indication of bleeding.

The first is, the acute idiopathic cephalalgia, arising from a particular determination of blood, towards the cerebral organ. It is very frequent in the putrid synochus; violent in its attack, it commences before, with, or during the first days of the disease, and occupies rather the posterior part of the head; sometimes, however,

ever, it resides at the bottom of the orbits, or in the forehead, with a sensation of weight, accompanied, frequently, with tinkling of the ears; sometimes, the patient fancies he hears the sharp sound of a bell; delirium is then imminent. When it becomes fixed, it remains there permanently, in the same degree, or goes on increasing incessantly, without either remission or intermission. Independent of every other symptom, it is neither restrained by their aggravation, nor by their abolition; it is generally accompanied by great heat, by thirst, by a hard pulse, and by other symptoms of impetuous circulation, and determination (*mouvement déregle*) to the head. It is principally on account of these two indications, that, in the putrid fever, the violent head-ach may sometimes require bleeding, more especially in this case, that the cephalalgia, continually increasing, presages either a salutary hæmorrhage, or idiopathic frenzy.

However, neither the sensation of weight, nor the violence of the head-ach, can at all authorise blood-letting, as long as the symptoms of increased circulation, and disordered determination, do not accompany them, and it must be carefully avoided, if those symptoms present

present themselves, attended by vertigo, lassitude or anorexia. The contrary practice has been but too common with inexperienced practitioners, and has destroyed many, who might have been saved by a prudent delay.

Another species of cephalalgia, very common in fevers, is owing to the sympathy of the cerebral organ with the *primæ viæ*, it is known by the concomitant symptoms of previous disorder in the digestive organs, such as nausea, impaired appetite, loaded tongue, yellowish colour of the eyes, &c. This head-ach frequently commences, some days subsequent to the attack of the disease, the periodical exacerbations of which, it partakes of; occupies in preference, the frontal region, above the orbits, extending to the temples; sometimes, however, it afflicts the occiput, or the whole head; the pain is sometimes obtuse, sometimes acute and intollerable; it yields only to emetics or purgatives: and we may find, in the celebrated Tissot, what fatal consequences have attended the injurious system of bleeding in those cases.

People who, from excessive irritability of the stomach, are subject to megrims, constantly suffer from head-ach when they are attacked with

with fever. This cephalalgia, which is generally nothing more than a spasmodic affection, soon becomes evident, from the circumstances of the peculiar sensibility and habit of the subject, as well as from the nervous character of the fever. Sometimes, the patient complains of spasms, originating in the belly, and extending, by the chest and neck, to the head: there, they occasionally produce a sense of vibration, and slight oscillation in the muscles of the face; at other times, of excessive pains, which affect, now the summit of the cranium, now the front; in some cases, confining themselves to one side, in others, occupying the whole of the head. Sometimes again, this species of cephalalgia is met with, concentrated in a simple sensation of extreme cold, and then, its anguish is frequently accompanied by enormous vomitings, of a bluish green bile; it presents, in this case, another symptom, almost characteristic, that is, a debility of pulse, altogether disproportioned to the extent of the disease; and that, because those who have naturally weak and irritable stomachs, have almost always a weak pulse; an observation, which it is right to know, since it serves to establish a prognostic in fevers, and which may shew, at the same time, that in these cases, blood-letting is absolutely contra-indicated.

This weakness of the pulse should be carefully distinguished from the small pulse, close and somewhat hard; which, very frequent in violent head-achs, depending upon inflammation of the membranous parts of this organic system, is similar to that which we frequently find in pleuritic people: the distinction will become so much the more easy, that, in the latter case, we always find other symptoms of inflammation.

§ III.

Of the Lineaments of the Face, of the Colour, and of the Eyes.

HIPPOCRATES attached so much importance to the inspection of the face, that he has, in regard to it, established a particular lesson. "In acute diseases," says he, "we should first "examine the physiognomy of the patient, if the "lineaments are in no way changed, if the coun- "tenance bears its natural character, it is a fa-

"vourable

" vourable sign ; if the contrary, the alteration " presages no good."

With respect to the colour of the skin, the following are the principal points for observation. In general, the more the fever partakes of the character of debility, the more the colour will be pale, leaden or livid; the more the skin, particularly towards the forehead, will be rough, contracted and dry; the more, in fact, will the extremities be discoloured and cold, and the eyes sunk in their orbits; these symptoms, which are more frequently met with in the nervous and malignant, than in the putrid fevers, forbid all sanguineous evacuation. On the contrary, the more the face is red, the skin warm and burning, (particularly if it is so from the commencement, and if we observe, at the same time, a certain degree of precordial anxiety, a difficulty of respiration and restlessness), the more the fever partakes of the mixed inflammatory character: and that state announces impending danger of inflammation of the viscera, or delirium, should the aspect of the patient moreover be wild and haughty. However, as these symptoms frequently disappear by a nasal hæmorrhage, by diarrhea, or by abscess (*dépô*) behind the ear, or elsewhere,

where, the prudent physician, before he orders bleeding, will carefully examine, whether he can discover in any part, signs of those critical determinations.

Sometimes, in the putrid, as in the nervous fevers, the skin, as well of the face, as the rest of the body, bears a yellow tint, mixed with a pale, reddish or livid colour; this tint prevails, in direct proportion to the degeneration of the humours, at least when it does not depend upon morbid heat in the stomach, or upon a secondary affection of the liver, the existence of which, is evinced by particular symptoms. If then, the yellow colour appears at the commencement of the disease, it is a worse symptom, than if it was afterwards produced by heat, because, it may announce either an inflammation of the liver, or extreme malignity. We have, on this subject, the aphorism of Hippocrates. "The yellow colour, which appears "before the seventh day, is deceitful, that which "occurs on the seventh, ninth, eleventh or "fourteenth is salutary, provided the hypo-"chondria are not tense, otherwise it may be "equivocal." (1)

(1) Hippoc. de Ass., sect. xi. Pringle, tom. 1, p. 258.

Although this yellow tint, abstractedly considered, forms, in the putrid synochus, a contra-indication to bleeding, it does not always absolutely forbid it; for if, for example, we meet it at the beginning of the disease, in phlethoric and bilious subjects, with symptoms of such violent reaction, as to create a dread of still more serious disorder, we may, as I have often done, notwithstanding the yellow tint and known character of the disease, of too evils choose the least, and let blood. The celebrated Stholl followed a similar practice, in the bilious inflammatory pleurisy.

The state of the eyes furnishes several indications, for or against bleeding, worthy our attention; for it is certain, that the eyes undergo changes, and loose their brilliancy, in proportion as the vital œconomy is injured, and it is not without reason, that the Oracle of Medicine has said: "The state of the eyes, is that of "the whole body."

When, in the putrid, or nervous putrid fevers, which partake of the inflammatory diathesis, we find the eyes red, inflamed, shining, heavy, distracted or wild; when the aspect is stern and bold; when the eyelids are extremely contracted

tracted or dilated; when the tears flow involuntarily, we may expect convulsions, or phrenetic delirium; because these symptoms denote, that the brain is in a state of irritation, or of inflammation, which, notwithstanding every other contra-indication, imperiously demand bleeding, either general or local, at least should nasal hæmorrhage, or some collection about the parotids, not be upon the point of taking place; and, it is in this sense, we should attend to the following prognostic of Hippocrates: "All those who, in continued fever, remain "mute, the eyes closed, or now and then half "open, and who, after epistaxis or vomitings, "come to themselves, recover from the disease: if, on the contrary, those evacuations "do not take place, respiration becomes embarrassed, and death is at hand."

Amongst the symptoms of cerebral irritation, we have enumerated, flowing of the tears; however, it is right to remark, that, if the patient sheds tears in consequence of a natural cause, on seeing, for instance, his children, or a beloved wife, that is a proof, then, that the affections are not interrupted, and that the mind reacts upon the sensations; but, we repeat it, if the tears flow without evident cause, it is a very

very bad omen. There is yet, on this subject, an aphorism of the Grecian Sage: "When, in "acute, particularly ardent fevers, the tears "escape involuntarily, we must wait an epistaxis, if there are no other bad symptoms; "but, if there are, the tears presage, not "hæmorrhage, but death."

Again, there may be a flow of tears, towards the end of the bilious putrid fever, with those in whom too great sensibility of the stomach, is connected with a difficult digestion. This weeping must not be confounded with the former. Tissot (1) has observed it frequently, in patients reduced by the bilious fever of Lausanne, and he cured it, not by bleeding, but by stomachics.

Sanguineous evacuation is contra-indicated, when the eyes are humid, muddy, livid, whitish, hollow, with a creeping or dusty sensation, dull, or having only a false brilliancy, whether they may be, moreover, inflamed or nót. It may doubtless appear astonishing to some of our readers, that it was from this false splendor of

(1) Tissot, de Feb. I Laus. in Opusc. tom, 1, p. 82.

 the

the eyes, that the incomparable Hippocrates, was able to foretel a bilious vomiting. (1)

I shall close by the following passage from one of his most worthy successors; "If, in "intermittent fevers," says Stholl, "the lips, "the eyelids, the brows, the eyes or the nose, "are in a distorted state; if the patient, al- "ready sunk, neither sees nor hears; if, in "short, we observe any of these symptoms, "the patient is near his last." He adds this aphorism of the Father of Medicine: "If, "during sleep, the half-closed eyelids expose "any of the white of the eye, it is a deadly "symptom." (2)

To conclude, all these symptoms prove, either extreme debility, or paralysis of the muscles of the eye; and, in whatever degree they may appear, in the fevers treated of, they by no means allow of bleeding.

(1) Prog. 3, N. 3.
(2) Sthell, Dissert. Med. t. 1, p. 317.

§ IV.

§ IV.

Of the state of the Tongue, of the Teeth, and of the interior of the Throat.

THESE are among the symptoms which more directly furnish indications, for, or against bleeding, or at least, the association of which, with other symptoms, peculiarly assist the therapeutical treatment.

In ataxic fevers, the pale and humid tongue, with general symptoms of great debility, is, in my opinion, of worse omen than the dry tongue; this shews at least, nervous reaction, whilst the other, indicates a state of extreme atony, and throws light upon equivocal symptoms, which we might attribute to other causes; it forbids all sanguineous evacuation.

If, in the early period of the putrid synochus, (when the reaction is, of itself, high enough) the tongue be soft, uniform, and a little red, but not too dry, we may expect a favourable issue, because it shews moderation of the reacting

 efforts,

efforts, and there is consequently no occasion to diminish their salutary action.

On the contrary, when, at the commencement of the fever, or immediately after its attack, the tongue becomes very dry, hot and rough, it denotes an excess of vascular action (*orgasme*) which, with other signs of too great reaction, clearly indicate bleeding.

But, if the disease has arrived at its highest pitch, the dryness, the asperity, the furrows, the blackness, or the dirty covering of the tongue, bespeaks an analagous state of the œsophagus, of the stomach, and of the intestines, owing to the more or less gangrenous state of the mucous surface; a state which I have more than once demonstrated in the dead subject, which the ancients long since recognised, as may be proved by referring to Areteus, (1) and in which, all sanguineous evacuation can without doubt, only exasperate the disease.

Sometimes in fevers, the tongue trembles so, that the patient cannot controul it; if the trembling be connected with dryness, with aridity,

(I) De Curat, m. acut, l. 2, c, 3.

and

and a kind of contraction of the lips, this spasmodic state, like other symptoms of cerebral irritation, by no means contra-indicates, of itself, blood-letting; but, if the trembling tongue be rather moist than dry, then, the impossibility of being able to articulate, accompanied, especially, by hanging of the lips, clearly points out a paralysis of it, and forbids all debilitating remedies.

Extreme redness of the tongue, at the commencement of the disease, with other symptoms of increased action of the arterial system, strengthens the indication for bleeding; if however, at the height, or at the decline of the disease, its surface be red and glossy, we must rather infer from thence, that apthœ are about to be produced; *depletion* then will be seldom, or rather never, useful.

The teeth, as well as the tongue, are frequently covered with a blackish dirty crust; this symptom, which is never observed at the commencement of the fever, evinces a high degree of degeneration, and decidedly requires tonic remedies.

Grinding of the teeth, at an advanced period of

of the degeneracy, indicates a secondary affection of the brain, and is a very bad omen. "If, in this species of acute fever, a patient "grinds his teeth more than ordinary, delirium "and death will follow." (1) But, if this circumstance is observed in the first period; if, at the same time, the eyes are fixed, the right hypochondrium a little swelled, the pulse a little hard; if the patient formerly complained of head-ach and restlessness, in that case, it is the symptom of cerebral irritation quickly followed by inflammation; if, in such a case, the other symptoms confirm that state, we may take blood from the arm, and, in a doubtful case, a topical *depletion* from the temple.

Frequently, in the period of degeneration, whilst the tongue, and interior of the mouth, are black and dry, the patients, tormented by urgent thirst, have an irresistible desire for cold water. This symptom has been considered by many authors, as the indication of an erythematous inflammation of the stomach, or other viscera of the abdomen, and as the precursor of gangrene; I have often remarked it at the approach of death, and, it in general pre-

(1) Stholl ex Hippocrat.

sages so much the worse, that such inflammation, is always accompanied by other signs of debility. As I attribute that thirst, and desire for cold water, which is never seen at the commencement of fevers, to the irritation of a putrid heat, *(foyer putrid)* I do not think that bleeding is there proper; in this case, against the opinion of many writers, I constantly allow the patient, moderate draughts of cold water. This practice, which I think obeys the positive indication of nature, is moreover justified by the success which Galen, (1) Mackenzie, (2) Sydenham, Forestus, (3) and Deman, (4), report of it.

A symptom diametrically opposite, but quite as unfavourable, is the absence of thirst, where the heat, burning and dryness of the tongue, might demand its presence. This phenomenon, which shews the loss of sensibility, appears also, only at the highest pitch of the disease, and evidently contra-indicates all *depletion.* The following is an aphorism of Stholl on this subject: " The absence of thirst in putrid

(1) Meth. Med. lib. 9, c. 16.
(2) Trans. Phil. 16, 17, p. 383.
(3) De Fib. pest. delf,
(4) Spec. med. in augur. de nat. hom.

" fevers,

" fevers, with a dry tongue, arid, chopped and
" blackish lips, is an unfavourable symptom,
" which denotes, either a violent affection of the
" brain, or a loss of the vital and sensitive
" powers!"

Bleeding, on the same principle, can yet be employed but very rarely in the malignant, nervous, and putrid fevers, accompanied by pain, choking, or distortions in the throat, without any apparent tumour. Those symptoms, which, in general, only shew themselves at an advanced period of the disease, are placed by Hippocrates, amongst the most unfavourable. I have always considered the secondary cynanche, in putrid fevers, particularly in the putrid synochus, as a portentous sign.

§ V.

Of the Pulse.

WE have already, in the former part of this work, remarked the symptoms furnished by the

the pulse, with respect to the increase, or diminution of the vital action, and consequently upon the employment of blood-letting in fevers in general; we here enter into some considerations, which more particularly determine, or modify those indications, in putrid or malignant fevers.

Sometimes, in these diseases, the pulse is extremely frequent, and accelerated, with alternate remissions and exacerbations; at other times, on the contrary, it is scarcely more frequent than in the natural state, and, on the first days of the development of the fever, it is even stronger and fuller, in proportion as the latter has more of the synochoid character. During the course of the putrid synochus, it daily becomes smaller, more contracted, harder, and more frequent, that it may get up, and become soft again, at the approach of convalescence. It is at the highest period of the disease that we feel that pungent heat, which so well distinguishes the putrid, from the simple nervous fevers, and of which we have treated in the first section.

In some patients, the pulsations are so natural, that we could not suppose the presence

sence of fever, if it was not proved by other phenomena; this occurs particularly in phlegmatic people, with little irritability, and when the disease partakes more of the low nervous; an observation which sufficiently proves, how grossly he will be deceived, who forms his opinion of the disease from the pulse, without considering, at the same time, the derangements of the other essential functions.

As the hardness of the pulse, in putrid fevers, may proceed from an irritation, or from a truly inflammatory diathesis, it will be necessary to make the distinction, which Stholl, Tissot, Cera and others have judged so important. We will recollect, that the putrid irritation is known, by a hard, but small and very quick pulse; by a constant restlessness, with delirium; by comatose whatchfulness; by convulsive affections; by abundant and clear urine; by very fœtid and greenish excrement: when, on the contrary, the hardness of the pulse depends upon inflammatory action, as it occurs in the first stage of the disease, we find it at once full and a little quick; there is continual drowsiness or comatose sleep, the urine is scanty and high coloured, the bowels are costive, the respiration slow, and the

the blood taken from a vein, presents a thick and tenacious crust.

To exhibit the uncertainty of a hard pulse, I shall quote a passage from the celebrated Cera: "I have sometimes," says he, "found "the pulse full and vibrating, in patients de-"prived of all vigour, lying immovable, "reversed, and apparently already in the arms "of death. Well, I warn you that nothing is "more equivocal than this pulse, and that it "is very necessary to pay attention to all the "other symptoms, particularly to the prostra-"tion of strength; for I well remember, to "have once found the pulse hard and strong in "a patient with fever, who died in a quarter "of an hour afterwards. Reflecting upon this "phenomenon, and comparing it with other "symptoms, I was convinced, that that hard-"ness only announced the total decline of "life; notwithstanding, however, it may easily "lead less experienced practitioners into "error."

Neither can we trust to the accelerated and frequent pulse, even when accompanied by considerable heat: "The celerity of the pulse, "connected with transient heat, more fre-

"quently

"quently denotes weakness, and a want of "blood, than its abundance or orgasm: it "would then be very little to the purpose, to "wish to treat every frequency of the pulse "by blood-letting. That state is very often "met with, in weakly and chlorotic girls (1)." In fact, whenever I have had to treat hysterical weakly women, subject to chlorosis, and attacked with nervous fever, I have found their pulse accelerated, with sudden strokes of heat, particularly about the face.

In general, if the pulse is nearly in the natural state, if it is neither too strong nor weak, too quick nor slow, nor unequal, it does not at all indicate bleeding, since it shews, that the circulation is carried on with regularity, and that the reaction is sufficient to resist the morbific cause. " When, in acute diseases," says Hippocrates, " the urine and pulse are good, " the patient seldom dies."

Frequency, debility, and inequality of the pulse, still much less indicate bleeding, except in the case of excessive plethora, or of extensive inflammation of a very sensible membra-

(1) Stholl. Rat. Med. t. 4, p. 519.

nous organ, in which the weakly pulse rises after *depletion;* those cases are to be known and distinguished, by the attending circumstances of the subject, the predisposing and exciting causes, and by particular symptoms, which unfold themselves in the origin of the disease.

It occasionally happens, however, that complications of the fevers of which we treat, cause, in the beat of the artery, some irregularities so singular, that they embarrass the most able physicians. Thus, Huxham observed, in very acute fevers, partaking of the inflammatory nature, a pulse so small, obscure, slow, and sometimes intermittent, connected with such debility of the vital and animal powers, that it might be supposed, that bleeding must be there absolutely hurtful; whilst, on the contrary, the patients, without that evacuation, could not have recovered. (1) These phenomena, otherwise extraordinary, depend, for the most part, upon the particular constitution of the subject, upon complicated causes, or upon the special character of the epidemic; they are explained by what we have said on this subject, in our first part.

(1) Ess. sur les diff. esp. de fiév. p. 225.

§ VI.

§ VI.

Of Deafness, and of some other Affections of the external Senses.

THE febrile deafness, which we meet with only in the putrid and malignant fevers, and which appears peculiar to those diseases, is very difficult of explanation. Van Swieten attributed it to suppuration of the meatus auditorius; an opinion, uniformly contradicted by practical observation, and numerous dissections; others, seeing that the affections of the ear, frequently preceded the comatose diseases, supposed, in the former, a compression of the cerebral part of the auditory nerve. Simon Herz (1) considers this deafness, as a simple nervous affection, and thinks that, in diseases of that system, nervous debility alone may produce momentary loss of hearing; this appears to me perfectly proved, by the deafness which is observed to arise, in the paroxysms of some intermittent fevers, and to disappear with them. (2) Some authors, indeed, have looked

(1) Obs. de febi nerv. p. 163.

(2) Vide Langon in N. C. vol. 1, obs. 32, Molitor in Coll. diss. path. Hall. v. 5, p. 270.

for

for the cause of this phenomenon, in a particular affection of the primæ viæ, the sympathy of which with the auditory organ, we are aware of. We meet with this symptom, as well in the simple nervous, as in the putrid malignant fevers, which might authorize us, not always to attribute it to a gastric affection. However, the authority of the Father of Medicine, and the following observation of Strack, prove, that it is frequently owing to that cause. "In a "petechial epidemic, many patients were at-"tacked with deafness, and it was generally "remarked, that the affection was worse, in "proportion to the embarrassment of the pri-"mæ viæ; that this inconvenience remained, "as long as the saburra *(a)* was neglected, "and that it disappeared, on the latter being "expelled." May we not here conjecture, that this sympathetic deafness is produced, through the means of the connexions of the great intercostal nerve, with those of the seventh

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(a) By the word *saburra*, so often used by the Dutch physicians, is implied, imperfectly concocted ingesta, too long retained in the stomach, or intestinal canal; and should that word be hitherto, or hereafter used in this Translation, it is to be thus understood.

pair?

pair? But then, why does one of those affections occur so frequently, without the other; and why is it oftener of a favourable, than an unfavourable import ?

However it may be, if this symptom occurs in the development of a malignant nervous fever, it indicates debility and wasting of the sensorial power, and consequently forms an absolute contra-indication to bleeding; if, on the contrary, in the putrid synochus, it appears accompanied by other symptoms of determination towards the head, it shews a congestion in the brain, and demands the use of the lancet. In a more advanced stage of the disease, when the other symptoms begin to ameliorate, deafness portends a favourable issue: it is then that, according to the observation of Pinel, being accompanied by a full, high and soft pulse, it precedes nasal hæmorrhage, or abscess of the parotids, as Stholl has also remarked.

In general, deafness much more rarely requires blood-letting, than the contrary affection, excessive acuteness of hearing, which rather announces increased irritation of the nerves, an incipient inflammation, or a violent determination to the head. It is the same with singing, and

and tinkling of the ears; which, in acute fevers, might induce a dread of the greatest disorders, delirium, and even frenzy; at least if they did not precede a critical epistaxis, or abscess in the parotids, or behind the ears.

We may make the same remark upon increased sensibility of vision, when the eye, too irritable, cannot bear the ordinary light; this affection, less frequent than the former, generally requires the application of leeches to the temples. Weakness, or dimness of sight, accompanied by other symptoms of increased arterial action, in the affected organ, also indicates a congestion, which may very soon become fatal, if not immediately removed by spontaneous or artificial depletion; but if, on the contrary, these phenomena appear, without symptoms of increased action, they contra-indicate bleeding; for, "When in a fever, not "intermittent, the patient neither sees nor "hears, and if he is in a state of debility, "death is impending." (1)

Diminution, or abolition of the sense of touch, which is likewise rather rare in putrid

(1) Eryerel. in Stholl, Diss. Med.

fevers, denotes a congestion of blood in the brain, or great diminution of the sensibility: the former is known by the concomitant symptoms of the cerebral affection; the latter, by other symptoms of debility, and particularly by that of the pulse.

§ VII.

Of Convulsions, and of Lesions of Voluntary Motion.

As all voluntary motion depends upon the integrity of the cerebral organ, it thence results, that every lesion of that motion, in putrid fevers, presumes an unhealthy state of that organ.

The principal forms, under which disordered voluntary action is observed in these fevers, are, muscular weakness, trembling, subsultus and convulsions.

The great debility and lassitude of the muscles,

cles, at the commencement of fevers, are produced, most frequently, by the enfeebling of the brain, or by the prostration of the vital powers; they announce a malignant or putrid disease, and consequently, do not at all admit of bleeding; we must, however, except that false debility, proceeding from extreme plethora, or from violent inflammation of some vital organ, and not from the direct influence of a sedative cause; but this case will be easily distinguished, by its particular symptoms.

Trembling, or vacillation of the members, at the commencement of nervous fevers, is yet another symptom of general debility: if it continues during the course of the disease, it denotes great malignity; if it supervenes during the putrid synochus, with signs of determination to the head, it is the precursor of delirium; and, in that case, would by no means contra-indicate a bleeding, which we might otherwise think necessary.

The subsultus tendinum, regarded as a kind of convulsion, and the appearance of which disconcerts so many physicians, occurs frequently in nervous and putrid fevers, which turn out favourably, and is sometimes observed

during the whole course of the disease; it does not then, by any means, furnish indications so opposed to bleeding, as the other signs of debility: if, on the contrary, we meet with this subsultus, or the tetanic affection of the lower jaw, in the height of the disease, which is more frequently observed in robust subjects, than in those of a weakly constitution, I think with Cera, that, in that case, these symptoms indicate something inflammatory: indeed I have frequently seen patients, attacked with these symptoms, get rid of the disease, after a violent hæmorrhage, a discharge of the menses, or a diarrhea of several days continuance; in short, I would no longer entertain a doubt of approaching inflammation of the brain, if I met with them, accompanied by congestion of the eyes, constant watching, a red countenance, and the pulse the least hard. But, should those convulsive motions shew themselves from the commencement of the disease, and without symptoms of inflammation, they should be referred to debility of the brain, or to exhaustion of the vital energy, and contra-indicate bleeding. They may be considered in the same light, when arising subsequently to cerebral inflammation: "In that case," says Boerhaave, "convulsions are very soon fatal."

There

There is another very singular symptom, remarked almost only by Hippocrates, and which he has considered as of bad omen; it is that motion by which the patient withdraws the hand, almost against his will, and without being able to account for it, when the physician would grasp it for the purpose of feeling the pulse, a retraction which also takes place in the tongue, on attempting to examine it with the finger; if this symptom shews itself at the height of the disease, it denotes such irritability and tension of the sensitive system, that the least impression upon the nerves, is sufficient to produce a disordered reaction in the muscular system, and threatens convulsions, which generally terminate unfavourably.

It is of importance to distinguish perfectly, this particular kind of convulsion, from those arising from a gastric affection, at the commencement of the disease, and which are observed in most people of advanced age.

Galen has observed, that, "Some patients, "suddenly affected with convulsions, were as "quickly cured of them, by a spontaneous

"bilious

"bilious vomiting (1)." Van Swieten (2) also shews, that vomiting sometimes instantly relieves febrile convulsions, and Tissot (3) has told us, tha the convulsions which sometimes accompanied the fever of Lausanne, were to be removed only by evacuations. Darluc (4) and Boucher have remarked the same thing in some putrid fevers. Medicus (5) has also seen, in some intermittent fevers, a general tetanus, owing to no other cause; the dissection of those who had perished of this fever, evinced no derangement of the brain; but the stomach and intestines were surcharged with a green and blackish bile. It is the same with the trismus which we som imes observe, in the paroxysms of intermittent fevers: the same author has found, in the irritation of the stomach, the origin of this trismus; a description of which he has left us, as well as the method of cure (6)

(1) De Aff. l. 3, c. 3.
(2) Com. t 2. p. 359.
(3) De F. Laus. l. c. p. 113.
(4) R. p. t. 6, p. 64 et seq.
(5) Sammlang, von beob. l. 1. p. 106.
(6) Epis. ad Zimmerman, p. 5, et seq.

§ VIII.

§ VIII.

Of Secondary Cynanche.

CYNANCHE is frequently observed in putrid and malignant fevers, under the form of a catarrhal affection: it is less frequent in the ataxic, or low nervous fevers; at least should these last, not be themselves of catarrhal origin, and in these cases, the symptoms, which in cynanche might require bleeding, hardly ever shew themselves.

If, in the putrid synochus, where, from the commencement, the inflammatory diathesis is recognised by all the symptoms of inordinate action, the pain, redness and swelling of the fauces, become quickly aggravated, it is right to bleed, either locally or generally, or even from the sublingual vein. If the inflammation be superficial, and the deglutition not much impeded, general bleeding is not necessary. We often meet with the inflammatory cynanche, in the advanced stages of the putrid synochus: this affection, then very dangerous, proceeds rapidly,

rapidly, greatly obstructs deglutition, or totally prevents it; when, in this period, we perform a general *depletion*, the strength is at the same time exhausted, whilst very often, the application of leeches to the neck would have relieved the sufferer.

The cynanche, termed malignant, which is met with sometimes during the putrid season, should be carefully distinguished from every other. In the first period of the disease, it may be very readily confounded with the *cynanche tonsillaris*, because, in both, many similar symptoms appear. We shall easily distinguish the former, if we consider the nature of the epidemic, and the absence of all the other symptoms of true inflammation: besides, it is characterized by vague horripilations, with strokes of alternate heat and cold; by the sense of acute pain in the throat, accompanied by a little cough; by pains in all the joints, and greater lassitude than in the other cynanches; there is present also, very often, a difficulty of respiration, a burning heat, nausea, vomiting, aversion to food, and depression of spirits. However, some robust subjects have, at the commencement, a pretty full and strong pulse, red face, and inflamed eyes, whilst

some

some others, of weaker constitution, have, from the commencement, a frequent, small and trembling pulse, and a yellowish tint of the face and eyes: but, under whatever form the malignant cynanche may be joined to the putrid fever, the symptoms, which we have described, do not remain more than two days in a doubtful state; they immediately become aggravated; the patient becomes delirious, the inflammation assumes the worst character, the interior of the throat appears of a blackish red, bespread with whitish and cineritious blotches.

It sometimes happens, that, previous to the malignant inflammatory symptoms having arrived at their highest pitch, an eruption takes place, which seems to diminish the pain of the throat: this eruption, which is not the scarlatina, but which rather approaches the petechiæ, brings only a deceitful and momentary relief; it frequently disappears on the fourth or fifth day, and the patient sinks.

I have seen seven cases of the cynanche maligna in the putrid constitution, and under the different forms which we have pointed out; in five of them, the subjects were robust: in the

two

two others, they were of weakly constitutions: of the seven, one was a woman, endowed with masculine strength. I could not save one of them: indeed with five, bleeding had been administered previous to my arrival, both topical and general, but with the worst results. I opened two of these bodies: I found the lungs, as well as the fauces, in a gangrenous state; I thence concluded, that this secondary inflammation, when, from its origin, the symptoms above mentioned shew a malignant tendency, never allows of bleeding: this was also the opinion of Stholl: (1) " The putrid cynanche," says he, " which is accompanied by a fever so " deleterious, as very soon to reduce the strength, " without evident cause, that is, without great " previous evacuations, or without hidden in- " flammation of a vital part, is now-a-days " termed *angina maligna*."

(1) Dissert. Med, t. 1, p. 20.

§ IX.

§ IX.

Of the Affections of the Respiratory Organ, in Putrid Fevers.

SOME subjects preserve, in putrid fever, a free respiration; in others, particularly in the exacerbation of the disease, it is confined, and frequently extremely laborious, from a sensation of oppression and weight, which they refer to the chest. We proceed in endeavouring to determine, when and how, in those fevers, this oppression and difficulty of respiration, may render blood-letting necessary.

If the patient, affected with these symptoms, complains, at the same time, of depraved taste, of a pain in the epigastrium, extending to the left hypochondrium, with a head-ach more or less violent; if it is in the autumnal season, or even in the month of July, the utility of depletion, will be, at least equivocal. Stholl has given a very instructive example of this. (1) " A Shoemaker, thirty-one years of age, com-

(1) Rat. Med. t. 7, p. 346, obs. xxx.

"plained

" plained, on the second of July, of want of ap-
" petite, and of a certain fœtidity in the mouth.
" The next day came on vague shiverings, more
" depraved taste, difficulty of respiration, pain
" in the epigastric region, and a sensation of
" universal depression. A bleeding was ad-
" ministered; the oppression ceased immedi-
" ately, and the patient thought himself better.
" The fourth of July, new difficulty of respi-
" ration, mouth still more bitter, great head-
" ach. The bleeding was repeated, but with-
" out any good effect. The patient continued
" thus, sometimes better, sometimes worse,
" and that from day to day, until at length,
" after several vomits and purges, he sunk on
" the 18th of August."

This disease, which the author describes under the name of bilious inflammatory peripneumony, appears to me to have been rather a gastric hæmitritean intermittent. I have had many similar cases, and followed a different treatment; after premising an emetic, I immediately gave bark, and the success crowned my expectations.

However, I am sorry in avowing, that, at the commencement of my practice, I committed similar

similar mistakes; and I must thence conclude, with the celebrated practitioner just cited, "that, "if a bleeding, even unseasonably performed, "frequently appears to give relief, the disease "returns very soon after this deceitful calm, "with increased fury. This favourable appear-"ance, this momentary alleviation of the most "serious symptoms, obtained at the commence-"ment of the disease, has sometimes induced "me to repeat the bleedings during its course; "but I have been too well taught by what "followed, to place any confidence in such de-"ceitful amendment."

The Father of Medicine formerly, (1) after him Van den Bosh, (2) and others, had seen, that pleurisies and peripneumonies should not, in fevers, be always attributed to the inflammatory diathesis, but that they more frequently take their origin, in affections of the primæ viæ. It may be from this truth that Baillou has said: "The pleurisies, which require bleeding, are not "so numerous, as those which are cured by re-"medies purging the gastric system," We find again in Stholl, (3) this important observation,

(1) Op. t. 1. sect. 1, cap. 7, § 52.
(2) Cap. 3, sect. 4.
(3) Ad. sup. sect. t. 3, p. 270.

that

that the local affections of the respiratory organs, which are frequently observed in the early periods of putrid and malignant fevers, are cured, for the most part, by emetico-cathartics, and are much less dangerous, than when, in the course of the disease, and after evacuations have been premised, a local painful affection is developed, which announces an insidiously disorganising inflammation *(mine sourdment)*, requiring only small bleedings, soothing drinks, and the application of fomentations, until the congestion be entirely dispelled.

The indication for bleeding is very manifest, when the respiration is difficult, hurried, panting, unequal, deep, or, when it is performed by the action of the abdominal muscles alone; which shews that the dilatability of the lungs is greatly diminished, and that they are less permeable to the blood: then we may bleed more copiously, as circumstances may demand; as for example, when the patient, oppressed, wishes to sit up, a desire which, according to Hippocrates, denotes inflammation of the lungs.

The Father of Medicine, and all the Coan School, paid more attention to the state of the respiration

respiration in fevers, than to the pulse. We find scattered through all their works, precepts on this subject; amongst others, let us quote the following: "A free respiration affords "strong hopes of recovery; when confined, "that is, frequent and short, it implies some "inflammation in the vital parts. A frequent "and short respiration, is the symptom of a pain, "or of an inflammation above the diaphragm." The slight spitting of blood, which, connected with a laborious respiration, is occasionally observed at the height of a putrid fever, does not at all depend upon dissolution of the humours, as some have contended, but rather upon incipient inflammation, which requires very slight bleeding and soothing treatment.

Stholl successfully employed the same remedies, when the anxiety, in putrid fevers, was accompanied by convulsions, by tetanus, episthotonos, &c. these symptoms not so often depending upon simple debility of the brain, as upon congestion of blood in that viscus; a state which is known from the wild look of the patient, by redness of the face, by inflammation of the eyes, and by the tense, though small pulse: I have always, in these cases, applied leeches to the temples or chest, with uniform success.

When

When the patient, in his wandering, heaves long and profound sighs, the anxiety, connected with the delirium, may be only a circumstance depending upon the delirium itself; or else, the respiration may be idiopathically small, interrupted and frequent, which evidently points out a difficulty in the passage of the blood through the lungs; in this last case, if there is no collateral objection, bleeding will be useful and necessary.

If then, at the commencement, or in the development of the disease, I meet, in vigorous and young subjects, the difficulty of respiration, simultaneous with typhoid delirium; when I find the tongue parched, the eyes inflamed and dry, a particular aridity of the skin, with a contracted pulse, I frequently order general depletion, and I have never had occasion to repent it, because there, the concurrence of those symptoms points out, almost unquestionably, inflammation of the viscera; if, on the contrary, this concurrence takes place towards the latter end of the disease, with symptoms of debility, I would always abstain from bleeding.

By this method I imitate the process of nature, which, whether at the commencement, or at

the

the height of the disease, greatly relieves, by the breaking out of the menses, women attacked with these kinds of symptomatic affections. On this head, I would strongly recommend not to bleed in irregular menstruation, because that operation almost always suppresses it. Many authors, likewise recommend this precaution; and Stholl inculcates it in these terms: "If the catamenia are about to flow, we may "bleed from the arm, and they will proceed; "but if we do so whilst they flow, they will "be stopped." (1)

Sometimes, in those fevers, we meet with pleuritic pain, perfectly imitating inflammation; this affection, which, in the schools is termed *bastard pleurisy*, requires precautions similar to those prescribed for anxiety, that it may not be imprudently confounded with the true pleurisy, and, in treating it as such, that a too powerful remedy may not be unseasonably administered.

The bastard pleurisy is easily recognised: the pulse is neither so hard nor so full; the urine is not so fiery; the cough is not so con-

(1) Rat. Med. pent. 6, Aphor. § 390.

stant nor so frequent in this disease, as in the true inflammation of the pleura; the pain is not in general, so intense; it readily changes place, passes from one side to the other, and, what is very important, that pain, which is sometimes developed in the course of the putrid fever, appears but rarely in the first periods of its invasion: thus, an imprudent bleeding might here exhaust the strength, without diminishing any of the symptoms.

This pain is not, in truth, seated in the serous membrane; it often depends, more or less, upon a catarrhal affection; it is sometimes produced sympathetically from cardialgia, (*foyer dans les premiérs vois*) or from the irritation of worms in the arch of the colon. With respect to this last case, Areteus thus expresses himself: "If the irritating cause is "in the colon, the pain mounts quickly, as far "as the superior ribs, and induces the belief of "an existing pleurisy, more especially, as the "patients have fever at the same time." We find in the excellent work of Morgagni, the history of a young man taken into the hospital of Boulogne, and in whom worms were observed to produce all the phenomena of a true pleurisy; the disease, which was exasperated by

by antiphlogistic remedies, disappeared, after a cylindrical worm was evacuated by a sanguineous vomiting.

However, if the pleuritic pain comes on very quickly; if it remains more fixed than ordinary, and continues to increase; if other symptoms, such as heat, dryness of the skin, hardness of the pulse, evince, in robust subjects, a putrid inflammatory complication, and that at the same time, no symptoms of heat in the primæ viæ are perceived, then, without hesitation, we must bleed generally, and above all things we must not defer it. If this pain occurs after the gastric symptoms have been removed by evacuations, and at a period of the disease, when the vital energy is already partly exhausted, it also denotes something inflammatory, but of a more equivocal character; I confine myself in these cases, to topical depletion by leeches or cupping, for fear of inducing too great debility, and I here apply the maxim of the venerable Grecian: "Bleeding is improper, "when we observe in fevers, slight pains about "the chest, without other symptoms." (1)

(1) In coacis, n. 491.

Zimmerman (1) shews us, by the following example, how reserved a physician should be about bleeding in similar cases, and how necessary it is to pay attention to the character of the disease: "Towards the end of 1764, "there prevailed in Switzerland, in the can- "ton of Berne, a putrid fever, which presented "the whole train of symptoms of inflamma- "tion, concentrated towards the chest, under "the form of a pleurisy; and notwithstand- "ing, bleeding was there not only useless, but "even destructive." Tissot (2) met with the same thing precisely, in the bilious peripneumony, which he has described to us.

In putrid fevers, the oppression, or pleuritic pain, may also be owing to the sudden and untimely suppression of a diarrhea, or of vomiting; in all those cases, we generally find the same symptoms; not only an extreme anxiety, but also swelling of the abdomen, tension of the hypochondria, depression of the pulse, and a universal lassitude: bleeding would be here almost always fatal. I shall give an example more favourable, taken from my own practice.

(1) Verdanhel. over den roodenloop. p. 17.
(2) De Febr. bil. p. 130.

A soldier

A soldier, aged twenty-two years, of a robust constitution, attacked with a double tertian *(hœmitritée)* fever, was taken to the military hospital of Ghent, the sixth day after the invasion of the disease. The spontaneous vomiting which had taken place the two first days of the disease, had changed into violent diarrhea, as it generally happens, when an emetic has not been administered in the begining. (*See* on this subject, Stholl. *Rat. Med. tom.* 1.) As the diarrhea was urgent, an assistant gave him a mucilaginous mixture, with laudanum and simaruba bark; a remedy, which I prescribed in some dysenteries in that hospital. The flux was immediately arrested, but next day, before the visit, the patient was almost choked by an extreme anxiety, arising from a considerable tympanites of the abdomen. The same young man, deceived by the symptomatic choking, imprudently bled the patient: the strength was reduced, without relieving the anxiety; the tympanites was excessive, when entering the hospital, I saw, for the first time, this unfortunate patient: I had immediate recourse to injections, and cordial purgatives: the diarrhea was re-established, and I had thus the pleasure of snatching the patient from death, It

is

is then, of the utmost importance, perfectly to distinguish this species of anxiety from every other, to prevent our falling into fatal error. We yet find in de Haen (1), an example of a similar mistake, by the inconsiderate use of opium, but in which bleeding was not practised.

It sometimes happens that patients, becoming already convalescent, are suddenly oppressed, the countenance becomes red, and the pulse higher, as if a new fever was in progress: these symptoms occasionally proceed but slowly, or remain a long time in the same state. I have carefully investigated what could be the cause of this phenomenon, which did not appear in the disease itself, and I have found, that it was generally owing to some of those irregularities in regimen, which it is unfortunately very difficult to prevent in an hospital. In such a case, even when there are some symptoms which might appear to indicate bleeding, it is more prudent to prefer emetics, or purgatives, as circumstances may point out.

I have frequently observed, at this period of

(1) L. c. part 3, p. 69.

the disease, a loss of voice, connected with the oppression: this symptom arises, either from a secondary catarrhal affection, so common in the large wards of hospitals, or from gastric derangement, also not less frequent: in this last case, it disappears by vomiting, whether spontaneou sor artificial (1). The Illustrious Van Swieten (2) makes mention of a student in Surgery, who, in the midst of a continued fever, was all at once attacked with aphony, though no sign of an affection of the brain had appeared in the whole course of the disease. He threw up, by vomiting, a lumbricoid worm, and the aphony immediately disappeared.

It is sufficiently evident, from all the preceding, how very doubtful many symptoms are, which we meet with in putrid fevers: I freely avow, that after having treated some hundreds of those diseases, I have found myself more than once embarrassed, and not knowing what part to take. How is it then with a novice in the healing art, an empirical practitioner, unacquainted with the first rudiments; sometimes an ignorant surgeon, who

(1) *Voyez* Hippocrat, coac, præn. n. 80.
(2) Comm. l. 4. p. 714.

practises

practises medicine, in all its branches, without talent as without diploma? We must lament these abuses, until it may please the Supreme Authority to obviate them, by some regulations more severe, and more conformable to the public interest.

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§ X.

Of Carus, of somnolent Coma, and of some other soporose Affections.

MOST patients, attacked with putrid fevers, do not rest, or pass the night in an interrupted sleep; others, from the commencement, remain stupid, in a state of insensibility, and appear to be unconscious of their disease; they are, however, easily awakened, but look upon every thing around them with an air of indifference, and answer to questions as if they were half deaf; this is the state which the antients termed *somnolent coma.*

This

This symptom is less dangerous than many others which affect the head, such as restlessness, violent deep seated pain, light delirium, &c. because, in putrid and nervous fevers, it does not so much proceed from inflammation of the brain, as from simple debility of that organ, which there induces a kind of congestion, without irritation: this symptom may also entirely depend upon a gastric affection. In neither, will blood-letting be of service: on the contrary, if we employ it for the purpose of removing a supposed compression of the brain, it will be absolutely hurtful, in this, that it will necessarily augment its debility. When that somnolency, having continued some days, gradually diminishes, it is a good sign; I have sometimes observed, however, especially in robust subjects, that it aggravated the state of the patient; in that case, the countenance was as if bloated and red, and the pulse suddenly became more elevated, or contracted and frequent. I contemplated these symptoms as the fatal precursors of something apoplectic or lethargic: in this particular circumstance, if no symptoms of morbid heat present themselves, a local depletion by leeches is indicated.

I met with this case twice in the same month,

and

and I lost both my patients after a local bleeding. On dissection, the vessels of the brain appeared very much distended: I was doubtful, whether a general bleeding might not have been more efficacious; but the putrid character of the disease, persuaded me of the contrary.

These observations besides, confirm that prognostic of Hippocrates: "In every disease, if "sleep aggravates, it is fatal: if it relieves, "there is every hope." *(1)*

This sleep sometimes occurs, in protracted nervous, or putrid fevers, whose symptoms denote exhaustion, in that case, it never requires bleeding. The following aphorism of Stholl is there applicable. "Carus or coma, supervening in the course of acute fevers, is a bad "sign; at least if it does not arise from irritation of the urine retained in the bladder, "from long constipation, from incipient swelling of the parotids, or from a miliary eruption about to break out."

I have sometimes observed in the course of these fevers, a profound sleep suddenly esta-

(1) Aph. 6, sect. 11.

blished,

blished, with a difficulty of swallowing, and of respiration, from which I have never seen recovery. These symptoms prove the atonic compression (*compression maladive*) of the brain, as well as the approaching paralysis of the muscles of the pharinx and respiratory organ; in all these cases, blood-letting will accelerate the fatal termination. "If," says Stholl, (1) "in a disease not anginal, drowsi-"ness appears, with difficulty, or impossibility "of swallowing, and anxious respiration, it "implies a metastasis to the brain, which "rarely admits of cure.

Sometimes drowsiness succeeds to delirium, and the symptoms of irritation which existed, are, at the same time, alleviated. This sleep, which announces the diminution of the cerebral erethism, is favourable, because it proceeds from the return of that organ to its natural action: this is the opinion of the Father of Medicine: "When sleep appeases delirium, it is "a good symptom." (2) In this case again, imprudent bleeding will prolong the disease, and obstruct the cure.

(1) *See* his Aphor.
(2) Aphor. sect. 11.

When

When this somnolency takes place at a high degree of the disease, as it frequently happens, or, after violent delirium, with lesion of the vital energy, it affords the worst prognostic, that of gangrene of the brain, result of the phrenetic delirium; and surely there will then be no question about blood-letting. "If sleep "succeeds the delirium, with a feeble pulse, "and cold extremeties, it is fatal." (1)

From what has been said, it follows, that in fevers, a disposition to sleep more than ordinary, generally contra-indicates blood-letting, unless sometimes at the beginning, or in the first period of the disease, and when its necessity is judged of, rather upon other concomitant indications: in proportion as we find symptoms of debility with the carus and coma, so we must abstain from depletion. The following observation will elucidate this truth.

A young soldier, convalescent from a paludal intermittent fever, which had completely reduced him, contracted, in December 1809, a new contagion in the same hospital. He complained for three or four days of lassitude,

(I) Stholl, Aphor.

of

of excruciating pains (*dédolation*) in the members, and of slight head-ach, the appetite was again lost, sleep interrupted, the pulse was rather more frequent than in the natural state, the countenance was pale, his eyes dull, exhausted and slightly inflamed. The fifth day, the prostration of strength became much more considerable and more evident; the pulse very weak, without, however, being more accelerated than on the four preceding days, so that it hardly indicated fever. Whenever the patient was alone, he fell into a continued drowsiness and low muttering; he awoke by starts, and if he was asked how he did, he answered, very well; (1) the tongue was tremulous, humid, and loaded with a yellowish covering.

That state of somnolency continued for two days; the patient's strength continued to decline, notwithstanding the administration of every tonic; trembling of the hands soon appeared, picking the bedding, (*la chasse aux flocons*) and other similar signs of great debility.

On the seventh day, all the symptoms became aggravated; the delirium proceeded with the

(1) Lieutand a remarque cette particularité dans la peste, L. c. pag. 47.

somnolency, whilst the eyes remained half open. The patient at length expired, at the end of the eighth day, in cold and clammy sweats, after an involuntary discharge of urine and fœces.

This was the true putrid malignant fever. I regretted not being able to dissect the body; but almost at the same time, a ward-master of the Civil Hospital died of the same disease, with the symptoms of somnolency exactly similar, and we had an opportunity of making the following observations.

The brain presented no traces of injury, except a somewhat preternatural flaccidity of its substance, and a slight aqueous collection in the ventricles. The lungs were sound; though the quantity of fluid in the pericardium was a little increased. The fauces, the œsophagus, and trachea were lined with a yellowish mucus, and the mucous membrane appeared slightly inflamed. The stomach was flabby, and contained, as well as the duodenum, a greenish liquid, mucoso-porraceous, and their internal tunics had traces of erythematous inflammation. The fœtidity of the intestines, shewed an advanced state of putrefaction. The liver

and

and spleen appeared sound; the gall-bladder was full of yellow bile, a little greenish and very thin.

This dissection shews, that the drowsiness which we sometimes meet with in putrid or nervous fevers, is not always owing to compression of the brain, but that it proceeds frequently, from its debility, or, that it is only sympathetic; and, if we consider attentively, that it is not uncommon to find the brain without any alteration after soporose affections, although, however, the contrary also happens; that very frequently, even anatomists of the first order, have not been able to discover, by dissection, the cause of fatal apoplexy in the brain; that, on the contrary, they have there more than once unexpectedly met with causes of compression, which no previous somnolency had indicated, and which had not at all contributed to death; that besides, we often observe, independent of fevers, soporose diseases caused by poisons, or excesses in venery, in wine, or of the table, affections which are cured by emetics or purgatives: witness the observations on a case of poisoning by the seed of hyosciamus, reported by Sloane, (1) and of another by the

(1) Philosoph. Trans. ann. 1733, p. 99.

grains

seed of thorn apple, which *Kauw Boerhaave* (1) has transmitted us; that many have been struck with apoplexy after an excess in wine, and immediately cured by emetics, of which Boerhaave (2), Forestus (3), and others have furnished us numerous examples; if, I say, we consider all those facts, we shall be readily convinced that, in fevers, soporose affections may arise, either from simple debility of the cerebral organ, or from its sympathy with the *primæ viæ*; (4) and we shall no longer be surprised at seeing them treated by tonics, and evacuants. It was thus that Riverius (5) cured by an emetic, a girl attacked during fever, by coma and convulsions, which had resisted every remedy; an experiment which has been repeated by *Ridelin*. (6)

The drowsiness, which frequently attends paroxysms of intermittent fever, should be referred to the same class; and, according to

(1) Impet. Faciens, p. 282, et seq.
(2) De Morb. Nerv. p. 563.
(3) Obs. l. 10, obs. 34.
(4) V. Rhunn. Dissert. de mir. comm. inter. cap. et visc. abdom. p. 31 et 82.
(5) Observ. p. 329.
(6) Obs. Cent. 1, obs. 40.

Hoffman

Hoffman (1) their returns may be prevented, by giving an emetic three hours before the fit, even when every other remedy shall have failed.

Hence arises the necessity of always attending to those symptoms which might denote gastric affection, although carus or coma, in putrid fevers, may, nevertheless, be considered as signs of compression of the brain, when we, at the same time, perceive other symptoms of increased circulation, or of determination to the head. If then, with the somnolency, we find nausea, bad taste in the mouth, tension of the hypochondria, vomiting, diarrhea, muddy urine, or only some of these symptoms, the somnolency will certainly not authorize blood-letting.

§ XI.

Of vague excruciating Pains, (dedolations) (*a*)

MANY patients, at the commencement of continued fevers, are afflicted with wandering

(1) Oper. omn. t. 3, pag, 215.

(*a*) Autalgia dolorosa of *Doctor Young*. Ostocopus, *Sauvages*. *Dédolation*, the word used by the author, from dedoleo or dedolo.

 pains,

pains, penetrating to the bones; and which, for that reason, Hippocrates has termed *osteocopus*. These pains, which occupy the neck, the back, and particularly the inferior extremeties, are so violent as to force loud cries from the patient, and which are not relieved until perspiration is fully established.

As, from inattention, and want of experience, these pains are often confounded with those of acute rheumatism; and as, under this mistake, they might be treated *bien mal à propos* by blood-letting, I proceed to draw the distinguishing lines of those two affections.

The rheumatic pains are not accompanied with lassitude, by any means so considerable as that attending fevers; they affect the muscles, particularly the large ones, as the celebrated Pinel has well remarked, in hindering their mobile functions, whilst the ostocopas seems to gnaw the bone to the very marrow; the acute rheumatism is exasperated by heat, whilst heat and perspiration relieve the fever pains; in short, the wandering acute rheumatism, which, according to Cullen, is always produced by the action of cold air upon the heated body, is characterized by all the symptoms

toms of arterial excitement, hard pulse, high coloured, frequently clouded urine, &c.; symptoms which never are so evident at the commencement of putrid fevers, in which the *dedolations* depend upon a morbid modification *(d' une modification maladive)* of the nervous sensibility, and always announce debility of that system; such is the muscular weakness we observe in the first period of intermittent fevers; it is for this reason that the ostocopas in general contra-indicates blood-letting.

§ XII.

Of Delirium.

Of all the symptoms which accompany putrid fevers, delirium is one of the most prominent, as well as one of the most frequent. The celebrated Cullen considered it as arising either from simple atony alone, of the brain, or, from a less degree of debility, accompanied with determination to this viscus. In my opi-

nion,

nion, it should be referred to one or other of the three following species:—

1st. Delirium from debility of the cerebral organ. It is this which is most frequently observed at the commencement, or in the course of nervous, putrido-nervous, ataxic, and other fevers of that kind: it is almost always of a pacific character, and is known by other symptoms of atony, such as lassitude, slight headach, vertigo, loss of memory, indifference, trembling of the limbs, weakness of the pulse, paleness of the countenance, limpid urine, &c. If, in this case, there is otherwise no sign of irritation, all blood-letting is absolutely hurtful. But it is still much more injurious, when trembling accompanies the delirium: I shall repeat, on this occasion, that Stholl thought it almost always mortal; he quotes this prognostic of Hippocrates: "If trembling accompanies delirium, it is constantly fatal."

We thus explain it—the trembling which ordinarily precedes the delirium, and which depends directly upon the nature of the nervous fever, denotes only primary debility, whilst that which succeeds the derangement of the mental functions, evinces a secondary debility,

lity, produced by internal lesion, sometimes by previous inflammation, of that organ.

If, however, any of the atonic symptoms above mentioned, are found with those of cerebral irritation, as may be the case, particularly at the commencement of the disease, and in subjects who are not yet much reduced; if continual restlessness supervenes, if the eyes and cheeks are redder, the pulse a little harder, the skin warm and dry, the tongue arid and rough, the urine of a higher colour; if there is, above all, a difficulty of swallowing, it will be useful, sometimes necessary, to apply leeches to the head; but we will abstain from general depletion, because it might too much diminish the vital powers, indispensable for the removal of a congestion speedily fatal.

We sometimes observe in ataxic fevers, and from the commencement of the disease, a kind of delirium which is nothing more than disturbed dreaming, without head-ach or suffusion of the eyes, but with paleness of the countenance, and accelerated weak pulse; this is a very unfavourable appearance, since it shews, that the animal powers are weakened by a cause, which appears to exist in the substance

stance of the brain itself. In this case, blood-letting is always fatal.

We find the following, upon this subject, in a letter from Professor Whytt to Doctor Pringle: "I still think that the substance of the brain "is affected, when the fever and delirium ap-"pear together, without having been preceded "by any head-ach, or redness in the white of "the eye. I have frequently met with this "species, and I have almost always found it "fatal." (1)

I have myself treated two patients attacked with this symptom: one died, and we found the ventricles of the brain distended by a pretty large quantity of serum.

2nd. Sympathetic delirium, arising from concomitant imperfect digestion, (*complication saburrale*). In this, the symptoms of irritation do not shew themselves, or in a very slight degree, whilst those of a gastric affection, and of fœcal congestion (*d'une matière à expulser*) evidently appear. This species is characterized

(1) Uyttreksel van eenen brief van Prof. Whytt aen Dr. Pringle, etc., in de uytgezogte verbandeling van geleerde, v. 5, bl. 91.

by

by foulness of the tongue, bitterness in the mouth, shivering, nausea, yellowish tint, sometimes slight inflammation of the eyes; by tension of the hypochondria, deep ruddy coloured urine, &c. This sympathetic origin, so frequent, that Tissot (1) has affirmed, that of twenty cases of delirium, as well acute as chronic, eighteen have their source in the abdominal viscera, has been recognised by physicians of all ages, as frequently taking place in fevers. Galen teaches, that the delirium which supervenes in the height of fevers, is not always owing to the direct affection of the brain, but more frequently to its sympathetic connection with the *primæ viæ*, (2) an opinion, which we again find in the doctrine of Boerhaave. (3)

The celebrated Cullen has established, in a very plausible manner, that phrenetic delirium arises very often in fevers, from the sympathy of the cerebral organ with the gastric system. We cannot but adopt this opinion, when we consider, that all the symptoms which precede or accompany delirium, are often concentrated in the *primæ viæ*: those are, uneasiness and

(1) De Feb. Lausan, t. 1. pag. 77.
(2) De locis adfect. tom. 7, p. 428, ed. chart.
(3) De morb. nerv. p. 360 et seq.

swelling

swelling of the hypochondria, internal heat, pulsation in the epigastrium, greenish or black bilious vomitings, cardialgia, hiccup, limpid or whitish urine, liquid, green, frothy, reddish, fœtid excrements, &c. a series of phenomena which sufficiently point out considerable lesion, sometimes inflammatory affections, of the abdominal organs. The mode of cure likewise confirms this opinion, since those ravings often yield very readily to emetics (1), other evacuants (2), or to spontaneous diarrhea; a result which would doubtless be very seldom obtained, if the affection of the brain was idiopathic, and reached to a state of inflammation. This opinion, in fact, is borne out to demonstration, first, by the dissection of many persons dead of frenzy, and in whose brain no injury was found, whilst in the stomach, the manifest cause of the disease was observed. *See* the observations of Bonnet (3), of Morgagni (4), of Wepfer (5), of

(1) Boerhaave, Aphor. §. 701, t. 11; Van Swieten, p. 596; idem, comm. in aphor. 702; Stholl, etc.
(2) Pringle, l. c. t. 1, p. 3.
(3) Sepulch. anat., l. 1, sect. 7, obs. 13. 14, 16.
(4) De sedib, et caus. morb. epist. 7. §: 2, 3, 4, 6, 8.
(5) Exerc. de Apoplex. p. 545.

Malouin

Malouin (1), and many others. Second, by the history of the disease of those in whom, after death, traces of inflammation of the brain were found, and in whom we have frequently not the slightest mention of phrenetic delirium: consult, for example, the description of the disease which Hippocrates terms *sphacelus of the brain* (2), which clearly appears to have been a true cerebral inflammation; notwithstanding, in the enumeration which he gives of the phenomena, the Father of Medicine mentions nothing resembling delirium.

During the whole course of an inflammation of the brain, with which the celebrated Doctor Home was affected, he so well enjoyed the exercise of his mental functions, that he was enabled to observe, in himself, all the symptoms which he afterwards described with so much exactness; and the chephalic apoplexy, what is it else, at bottom, than a real inflammatory affection of this viscus? I have often observed this disease, and I have never found in it, phrenetic delirium. I by no means deny, however, that inflammation of the brain

(1) Memoire de l'Académic Royale des Sciences, année. 1753.

(2) De Morb. l. 2 et 3.

can

can produce frenzy: indeed I have sometimes found, by dissection of phrenetic subjects, watery collections, suppurations, gangrene, or livid spots in that organ; evident vestiges of previous inflammation.

The third species of delirium, frequently observed at the commencement, or during the development of the putrid synochus, announces itself by some evident symptoms of a determination to the head, without any sign of general debility: this delirium, which, in robust persons, reaches sometimes to fury, is generally preceded by great head-ach; during the delirium even, the countenance is red, occasionally a little livid, the pulse is strong, the heat burning, the eyes wild and inflamed. It is of this species, that Areteus says (1): " If " the delirium has appeared at the same time " with the fever, it will be necessary to bleed " from the arm, the median vein in preference, " on the first or second day." In short, those symptoms shew, that from the commencement, the brain is seized by a kind of inflammation, which, in putrid fevers, rather than in any other disease, quickly degenerates into gan-

(1) De curat. morb. acut. lib. 1, cap. 1.

grene,

grene, or into an ichorous suppuration: the business is then to arrest the determination to the brain, on its first appearance, for afterwards, the symptoms of a fatal termination are rapidly unfolded, and then, all blood-letting will be at best useless.

Pringle (1) enumerates, as indications of confirmed inflammation, sudden sinking of the pulse, pale urine, sensation of weight in the head, prostration of muscular strength, dejection of mind, and subsultus tendinum. He adds that, in subjects who had laboured under these symptoms, he found the brain so charged with pus, that he could have collected three ounces of it, and that upon another occasion, he found a vomica in the cerebral substance. M. Goulard (2) quotes a case where, after a putrid fever, he found, in the right lobe of the brain, a vomica as large as a hen's egg: dissection has also afforded me many examples of similar alteration.

From these facts we may infer that, in the putrid synochus, inflammation of some essen-

(1) L. c. t. 2, p. 72 etc.

(2) Hist. Mem. et de l'Aead, Royale des Seiences. ann. 1754. Journal des Savans, Avril 1761, pag, 304,

tial

tial organ, is oftener to be dreaded than in the nervous fever; and consequently that, in the former disease, blood-letting is more frequently indicated. Let us not forget however, that every inflammation which occurs in a putrid fever, assumes, from it, a particular character; that it appears to depend less upon a true inflammatory state, than upon a kind of putrid irritation, more or less deleterious, and that it inclines, of itself, to the least favourable terminations. If the symptoms appear in the first period of the disease, whilst the strength is yet entire, and that the putrid degeneration has not made great progress, we may employ blood-letting; but let it be always to the purpose, and on the first appearance of urgent symptoms.

When the same phenomena are developed in a more advanced stage of the disease, we must, for the most part, abstain from a remedy which then affords no prospect of success. That inflammation must then be considered as a last inordinate effort of nature, establishing in the brain, a rallying point, to extricate herself, by that means, from the agent which oppresses her; an effort which, thence thrown upon some less important parts, such as the

extremities

extremities, or the inguinal glands, removes, sometimes, the whole virulence of the disease. (*a*)

I shall here add the remark of Zimmerman, (1) " that in doubtful cases, the delirium is " sometimes induced, or exasperated by blood-" letting." In that case, we must consider the delirium as arising from atony, and carefully abstain from a second depletion.

Blood-letting is again contra-indicated, when, at the height of the disease, a diarrhea is connected with the delirium. " When, during delirium a diarrhea appears, at the period when

(1) Verhandeling over den rooden loop. p. 399.

(*a*) The idea conveyed in this sentence, being somewhat fanciful, I shall give it in the words of the author.

Lorsque les mêmes phénomènes se déploient dans un degré plus avancé de la maladie, il faut le plus souvent s'abstenir d'un remède qui alors ne présente aucune perspective de succés. Cette inflammation doit alors être considérée comme un dernier effort désordonné de la nature, établissant dans le cerveau un centre de fluxion, pour se débarrasser par ce moyen de l'agent qui l'opprime ; fluxion qui, jetée sur des parties moins nobles, comme les extrémités ou les glandes inguinales, emporte parfois toute la virulence de la maladie.

the

"the disease tends towards solution, that diarr-"hea decides *(judge)* the disease." This is the prognostic of Baglivi, and I am daily convinced of its correctness.

Some subjects are seized with delirium, or rather with a kind of stupidity, at the very point of convalescence: this is particularly observed in weakly and hypochondriacal women, and I have seen some patients recover from it, only insensibly, and after many weeks. Sydenham, in speaking of this appearance, justly warns us "not to apply here, the ordinary "cure of delirium, it, on the contrary, "must be cured by time, by tonic remedies, "and generous diet, since this kind of delirium "appears to proceed, not from sanguineous "congestion in the cerebral organ, but from "exhaustion of the vital energy. It is on this "account, that it is not here necessary even "to administer local bleeding; and if, as it "frequently happens, such subjects be blooded "under pretence of removing the sensation of "weight from the head, or the tedious drowsi-"ness, the period of returning vigour is re-"tarded, and sometimes an imbecility is in-"duced for the remainder of life."

§ XIII.

§ XIII.

Of Nasal Hæmorrhage, of the Menstrual Flux, of Hæmaturia, &c.

ONE of the symptoms which, in putrid fever, throws most light upon the indication of bleeding, and concerning which, notwithstanding authors are very much divided, is the nasal hæmorrhage which is sometimes observed before the sixth day, at others later, and is accompanied by symptoms, differing materially, from the period at which it appears, the constitution of the patient, and from the particular species of the disease.

The principal authors, Pringle alone, perhaps excepted, look upon this symptom as a proof of degeneration, or extreme atony of the capillary system, which renders it a fatal omen at any period of putrid, as well as nervous malignant fevers. For a long time, however, observation has led me far from a decision so generally absolute, when it relates to the hæmorrhages which occur in our common putrid fevers, (putrid synochus) very different from

from the nervoso-putrid or pestilential fevers. My opinion however, is not altogether contrary to the experience of the authors who have most contributed to establish this prejudice; in truth, when Cera (1) taught that hæmorrhages were rarely useful, he treated of hospital fever; and when Mead, (2) Salius Diversus, (3) Diemerbroek, (4) Vandermey, (5) Wepfer, (6) and many others, deduced from thence a constantly fatal prognosis, they spoke of the plague, in which, certainly, and no physician ever doubted, all sanguineous evacuation, at whatever period, could only hasten the death of the patient.

Although the putrid synochus, in its worst form, bears, in many circumstances, great affinity to the plague properly so called, it is no less true that, particularly in its first period, it presents a peculiar, and very distinct character, which seems to hold a middle station between the *synocha* and *typhus*, adopting

(1) Op. l. 5. 50.
(2) Momt. et Præcept. p. m. 11.
(3) De F. p. cap. xvij,
(4) De Peste, l. 1, c. xv.
(5) De Morb. bredan. p. 8.
(6) Aut. aquat. hist, et noxæ, cap, 5, p. 52.

the

the denominations of Cullen, whose methodical work, particularly with respect to description, is, in my opinion, the best of the kind.

Now, in this disease, we do not often observe, in the first days, even when the heat is fully developed, other symptoms than those of increased energy in the circulating system; during that period, it is not uncommon to remark congestions in the head, which nature alone also frequently succeeds in removing by a salutary hæmorrhage; and, the equilibrium thus restored, the putrid fever runs its course in a milder and more regular manner. It is from thence, we explain the assertion of Doctor Pringle (1): " That, those hæmorrhages have " always the effect, of rendering the termina- " tion of the fever, more prompt and com- " plete."

Having consulted what authors have left most determined upon this point of doctrine; having compared it with what practice and experience has taught me, I have attempted to draw some inferences, which, perhaps, may

(1) L. c. tom, 1, p. 256.

throw light upon a subject hitherto somewhat involved in obscurity.

1st. In all kinds of nervous, malignant or ataxic fevers, where no symptom of inflammatory action is observable, all hæmorrhages are constantly unfavourable, because they announce the decline of the strength, as well as general atony, and can never indicate blood-letting.

2nd. In the nervoso-inflammatory fevers, as well as in our common putrid fevers, (putrid synochus), if nasal hæmorrhage supervenes before the arterial energy be much injured, particularly, previous to the sixth or seventh day of the disease; if symptoms of congestion in the head, such as head-ach, redness of the countenance, throbbing of the temporal arteries, &c. are developed; if, although the tongue may be at the same time arid, the eyes inflamed, and that there may be a certain oppression of the animal powers, the patient finds himself considerably relieved by this spontaneous evacuation, which, in that case, fulfils the blood-letting; we must not perform that operation whilst the hæmorrhage exists.

3rd. If, however, the symptoms of congestion in the head or chest be urgent, and that the hæmorrhage does not immediately take place, we must not wait, even should there be symptoms of its approach: the danger being pressing, and spontaneous evacuation always more or less uncertain, we ought instantly to practise blood-letting, either general or local, according to the circumstances and strength of the patient. I have followed this method in numbers of cases, and never had occasion to repent it.

4th. When, at the commencement of putrid fevers, we remark, in young women whose menses have been accidentally retarded, or in young people affected with habitual epistaxis, symptoms of a greater reaction, or determination of blood upon any important part, we will likewise not wait for spontaneous hæmorrhage, but prudently institute artificial depletion, because we must consider such subjects as always plethoric, and therefore we have reason to dread destructive consequences, from particular determinations of blood.

5th. If, in the putrid fever, we observe, about the fourth or fifth day, some drops of blood

blood flowing from the nostrils, or a slight and insufficient hæmorrhage, for robust subjects, full and accustomed to good living, we must by no means wait, as some advise, a salutary hæmorrhage on the seventh day; for, instead of this critical evacuation, I have frequently seen phrensy supervene, when not prevented by blood-letting.

Of this, the following is a very lamentable example.

In the year 1809, a respectable citizen contracted a putrid synochus, whose attack was announced by head-ach, cough, and other symptoms, apparently those of an insidious catarrhal fever. I was called the next day, and I found his pulse pretty strong, his face somewhat red, his tongue white, the urine pretty high coloured; he had passed an unquiet night, and perspired a little; and altogether, I saw, at that time, no other unfavourable symptoms, than a certain difficulty of speech, and a slight embarrassment in the intellectual functions.

The patient, however, a full gouty man, and living free, immediately formed an unfavourable

able idea of his situation, and believed himself attacked with an aggravated intermittent fever. For my part, I considered the disease as putrid synochus, acquired from contagion, and brought into action by catarrh. That I might better observe its progress, I tampered with it, and only prescribed an oxymel, with the spirit of Minderer and a neutral salt. The third day, the same symptoms were still observed, when several physicians were called in consultation: all, against my opinion, took the disease for a masked intermittent fever, and advised that it should be subdued by the cinchona. This advice was adopted, because it accorded with the idea of the patient himself.

I foresaw the unfavourable result of the too early application of so energetic a remedy; however, there was ordered, by virtue of the majority of votes, an ounce of bark in substance, to which the patient, to annihilate, at once, the supposed intermittent fever, added, by his own direction, half an ounce of the extract. The whole of this mass of bark was used in a very short space of time, and with such effect, that on the morning of the fourth day, every symptom of determination to the head

head was aggravated; the pulse had become stronger and fuller, the heat had increased, there was no rest, the urine was deep coloured, and somewhat muddy by a slight cloudiness, and some drops of blood oozed from the nose. The patient remained in this state until the seventh day, when he was suddenly seized with furious delirium, jumped out of bed, opened a sash, and threw himself on the roof of a house.

Here was a phrenzy which should have been foreseen. They attempted to cure it by topical bleeding from the head, but without effect, and the patient died, on the ninth day of his disease.

This case proves to us that, frequently, under the putrid constitution, and in plethoric people, full and well fed, the disease partakes more of the inflammatory than of the putrid character; that this assertion of Hippocrates, "If, on the fourth day, an oozing of blood from "the nostrils, with slight cloudiness of the "urine, is observed, we may expect a hæmorr-"harge on the seventh," is not always conformable to experience (*a*); that we must not delay

(*a*) Rather, is not always conformable to *bad practice*, and thus the Coan Oracle may even here elude the aspersion thrown upon its infallibility.

blood-letting

blood-letting until the brain becomes excessively stimulated by the congestion, for then we shall, without doubt, employ tardy remedies to no purpose; and lastly, that the following observation of the celebrated Cera is quite correct; "In this sort of fever, the premature use "of febrifuge remedies, does more harm than "good."

6th. If, in an advanced stage of the disease, an oozing or hæmorrhage from the nose occurs, and, at the same time, the countenance be pale, the pulse weak, the urine crude *(peu cuite)*, the eyes dull or inflamed, and the patient of a weak constitution: if, indeed, only some of these symptoms present themselves; hæmorrhage should be considered as very unfavourable, and as expressly contra-indicating phlebotomy, above all, where accompanied by petechial eruption, a circumstance which often occurs.

7th. In general, a very slight nasal hæmorrhage, only flowing by drops, cannot be regarded as salutary in the putrid synochus, or putrid catarrhal fever; it would rather indicate a certain congestion (*stagnation*) of blood in the cerebral capillaries, which sometimes, as we

have

have elsewhere said, may render blood-letting necessary.

8th. When, after hæmorrhage, the principal symptoms, such as heat, and particularly thirst, are mitigated, it is a very favourable prognostic, as it shews that it was really critical. Prosper Alpin experienced this upon himself; (1) and, in this case, there is certainly no occasion to add any thing to the salutary operation of nature.

9th. The too abundant hæmorrhage in putrid fevers, should by no means be treated by blood-letting; this remedy cannot, moreover, answer there, since it would necessarily increase the debility, which is itself partly the cause of the hæmorrhage.

10th. If the menstrual evacuation occurs in the first period of the disease, and whilst the strength is entire, it is generally useful. I have always abstained from bleeding in these cases, although some symptoms might have otherwise previously indicated this operation: we must rather encourage the existing discharge

(1) De Presag. vit. et mort.

by

by fomentations to the abdomen and pubes. If, however, from any cause, the menses should be suddenly suppressed, and that this is followed by symptoms of congestion or irritation in the head or chest, I think it will be proper to open freely, a vein in the arm.

In an advanced stage of the disease, the menses are rarely useful, their flow then augmenting the debility, contra-indicates bleeding.

11th. Every sanguineous evacuàtion which takes place from unusual parts, such as the lungs, the kidneys, or bladder, is commonly fatal in the putrid fever. Those hæmorrhages are almost always passive; consequently blood-letting aggravates them. It is thus that a spitting of blood at an advanced period of the disease, is mortal, and that, at the commencement, it announces the greatest danger. If, however, it should occur as last mentioned, with great oppression, a strong full pulse, and considerable heat, we may have recourse to a prudent evacuation.

Sydenham (1) regarded a discharge of blood

(1) Tract. cit. l. 1, cap. xv.

with

with the urine, as the most certain sign of imminent dissolution; and Diemerbroek repeats, (1) "that those who void blood by the urinary "passages, whether it be pure or mixed with "the urine, perish very soon afterwards." The only reason we can give for this phenomenon is, that neither the lungs, nor the kidneys, nor the bladder, are the emunctories by which nature usually relieves herself of superfluous blood, as she is wont to do by the nostrils or uterus.

§ XIV.

Of Sweats.

SWEATS vary exceedingly in putrid fever, as well in the period, as in the manner of their appearance. Sometimes they are observed from the commencement of the disease, and are augment-

(1) Tract. loc. cit. l. 1. cap. 15.

ed

ed daily at the approach of morning; at other times, they become daily more and more apparent. If the sweats are abundant from the commencement, they, in general, are not favourable symptoms, because they presume that the subject had been already attacked with debility, and a certain relaxation of the secretory extremeties, before the disease could have arrived at the necessary degree of coction.

Hippocrates (1), Galen (2), and Pringle (3) assert, on the contrary, that the sweats which, in putrid fevers, appear on the ninth, eleventh or fourteenth days, are often critical, or at least bring great relief.

Previous to this critical evacuation being established, the patient is greatly agitated by a general uneasiness; his complexion is higher; he is restless; the pulse is more full and soft; a considerable, b by no means ardent heat, is equally diffused over the w ole body, so, that the concurrence of these phenomena might induce an unwary physician, to suspect

(1) De Affect. c. 3.
(2) Libr. 3 de cris. c. 8.
(3) L, c, t. 1, p. 266.

an excess of arterial energy, or a secondary determination to the lungs, where he could only employ blood-letting with great detriment to the patient.

Although it has but very rarely happened to me to witness those critical days, pointed out with so much care by the antients, I have sometimes seen diseases suddenly change character by these salutary evacuations.

When these crises take place, or are impending, we must avoid disturbing the operation of nature, or of weakening, by ill-timed depletions, the powers necessary to their development.

It is well, further to observe, that we may expect a perspiration, which, according to Cullen, brings a salutary crisis by resolving the morbific spasm of the whole system, when, after a long continued general heat of the skin, without any affection of the more important viscera, the animal powers are suddenly unfolded, and the pulse becomes more full and soft, especially when not preceded by any spontaneous evacuation.

Hippocrates, long ago established the precept of not interfering with this crisis, when he said: "The perspiration which occurs on the "critical days, is of good omen in all acute "diseases; it should not, then, be interrupted: "it is also salutary when it is general, and "when it relieves the patient: that of an op-"posite character is not at all useful."

If the perspiration continues without any good effect, can we arrest it by bleeding? This method would be seldom safe; for, in the first place, the perspiration which occurs at the commencement of nervous, ataxic, malignant or masked intermittent fevers, always evinces debility, even when general, and as its continuance could only increase the weakness, and place the patient in danger, we must attempt to limit it; but, (and this is also Werlhof's advice), rather by bark and tonics, than by evacuants.

It is true, that, if it appears during the first days of the putrid synochus, and, if it was accompanied by any symptoms of increased energy, we might hesitate upon the indication of venesection: even in this case, we will not inconsiderately administer bleeding; we will recollect that

that, in the development even of the perspiration, the putrid synochus very soon completes its first period, and is converted much sooner into a real putrid fever, than if that excretion had not taken place.

In all fevers of malignant character, if the perspiration be unequal, interrupted; if it appears only at the extremeties, or towards the head, the face and neck, and that other unfavourable symptoms at the same time shew themselves, it must be considered as decidedly dangerous: according to the prognostic of Hippocrates, it indicates, in putrid fevers, death, and in slight nervous fevers, a protracted disease.

We may conclude then, that the existence of sweats in putrid fevers, never authorizes blood-letting.

§ XV.

Of Diarrhea.

IN the putrid, as well as in the nervous fevers, and their respective complications, the stools are

are pretty regular in some patients; in others deficient; but in most, particularly during the autumnal constitution, the evacuations are liquid and frequent from the commencement of the disease, or become so during its progress.

Diarrhea supervening at the commencement of simple nervous fevers, without gastric complication, denotes their prolongation, and by no means admits of sanguineous evacuation. Appearing in the course of the disease, it sometimes restores the equilibrium, and brings about a termination so advantageous, that, in general, I will venture to say, spontaneous diarrhea in the putrid fevers, is the most salutary of all the excretions. Sometimes however, and especially in nervous fevers, it appears owing to an increase of debility, and only aggravates the disease. In all those cases, blood-letting would be evidently hurtful.

The liquid stools, without much fœtor, which accompanies the *debut* of the putrid synochus, frequently owe their origin, according to Stholl, to a heat of the stomach, which has not been removed by emetics. They prolong the disease, cannot be at all arrested, and

never

never admit of blood-letting. If, during the course of the putrid synochus, the excrements are of a yellow, green, porraceous colour, or if they bring away worms, dead or alive, that diarrhea is often salutary, sometimes even critical, without the necessity of any other evacuation. A painful and fœtid diarrhea, on the contrary, which arises subsequent to the attack of the putrid synochus, before the coction of the disease, has been declared fatal by Hippocrates. (1)

When such a diarrhea appears in the first period, in a vigorous subject, whose abdomen is tense and painful to the touch, and when it is accompanied by thirst and heat, then, a small bleeding is admissible, although it may be often preferable, to apply some leeches to the hæmorrhoidal veins. In this case, the small and tense pulse, the common symptom of inflammation of the intestines, may lead the young practitioner into error, if he forgets that this pulse will become fuller and softer after well-timed bleeding.

But if, during the progress of the fever,

(1) Coac, præ. nat. n. 30.

there

there appears, as frequently happens, a looseness, with painful tension of the hypochondria, a secondary erythematous inflammation may then be suspected, which is owing to the putrid diathesis, and which contra-indicates bleeding. We find an example of this in the progress and treatment of the putrid dysentery.

The following are some further observations which may be of use in forming an indication from this symptom.

Hippocrates had already taught this lesson: "When the patients bear the diarrhea well, "when they feel relief from each evacuation, "when the abdomen becomes softer, the pulse "less frequent; when the strength returns, "the thirst mitigates, and the sleep becomes "more tranquil, we must encourage those evacu-"ations, and we have nothing to dread from "them, even should they be abundant." I can add, with Solanus, this observation, which I have likewise made: when we find, during the diarrhea, the pulse full and intermitting, thence arises an excellent indication of future convalescence: (1) if the diarrhea produces contrary

(1) *Voyez* à cet. égard de Haen, libr. cit, part 5, pag, 20, et part. 11, p. 482.

effects, it will be necessary to check it, but, in that object, we will rarely succeed by blood-letting.

Cera gives the following advice: " I warn " physicians who practise in hospitals, to be very " careful in ascert aining, whether the debili- " tating and symptomatic looseness, may not " originate from the particular situation in " which the patients may be placed. I am con- " vinced, that, in the hospital fever, in those " who have not been previously affected with " diarrhea, and who sleep in a warm part of " the hospital, the bowels are naturally inactive, " whilst in those who occupy a cold part, as " will often happen in camp hospitals, the " diarrhea becomes a common symptom, which " gradually increases, and which may produce " a very unfavourable complication in the " disease," (1)

I have occasionally met cases, not of frequent occurrence, where the inflammatory state suddenly returned, with a hardness of the pulse, gradually increasing, and that, after protracted

(1) Cera, de morb. nosoc.

sweats,

sweats, or immoderate diarrhea, induced by art or nature. On this subject, the same author thus explains himself. (1)

" I here appeal to all experienced physicians, " what a degree of attention is necessary in " this equivocal situation, not to administer " a bleeding improperly, which, notwithstand- " ing, might appear to fulfil the indication! In " such an embarrassing, but decisive case, I " recapitulate, in a general manner, the symp- " toms, and I do not dare to employ this re- " medy, formidable in such an advanced period " of the disease, except when the inflamma- " tory symptoms clearly preponderate, and when " the age and strength of the patient allow it. " In one of these very rare cases, which oc- " curred once, even after the fourteenth day, " where it was thought necessary to open a vein, " the blood appeared in fact, tenacious, and " covered with a glutinous coat, as if it had " been drawn at the commencement of the " disease, and all the symptoms were re- " lieved."

(1) Lib. citat. p. 48.

The state of the hypochondria may here throw much light on the inflammatory affection of the viscera; if they be swelled, without pain, there is nothing to dread: if, on the contrary, during the diarrhea, their tension is painful, it should be considered as an unfavourable sign. I only once obtained, in this case, prompt relief, from the application of leeches to the anus.

§ XVI.

Of Miliary and Petechial Eruption.

As the miliary eruption is rare in putrid and nervous fevers, so are petechiæ there common.

According

According to Pringle (1) and Strack (2), who have most ably treated of this affection, petechiæ generally appear on the seventh or ninth, sometimes however, on the first or second day, in the form of flea-bites, not circular, however; they are observed especially on the parts where the skin is most tender, as the neck, the breast, arms and groins; sometimes, says the latter, they cover the whole surface of the body: yet Pringle declares that he never had an opportunity of observing this fact. Further, those in whom the petechiæ are very numerous, do not thence suffer more than those who have less of them: these spots disappear the third day of their efflorescence, sometimes later: sometimes they persist even to the termination of the disease. They are so much the more dangerous, as their diameter is smaller (*a*), as their form is more irregular, as they are less red, and as they disappear more suddenly. That which merits the greatest

(1) T. 2. pag. 62.
(2) Obs. med. de morb. cum. petech,

(*a*) This, I believe, is not generally the case.

attention

attention is, that, according to the above authors, the eruption of petechiæ rather increases than diminishes the fever; which sufficiently proves that they cannot, by any means be considered critical.

De Haen (1) contends, against the opinion of Pringle, that the petechial and miliary eruptions, although of a different form, are, at bottom, only the same accidental symptom. There is no practitioner would admit this idea, now that it is well demonstrated that petechiæ have their seat under the skin, whilst the miliary pustules render the skin itself rough and unequal, are produced immediately under the epidermis, and seem to arise from the constriction of the exhalent extremeties, whence those little congestions which sometimes end in suppuration, and thus form white pustules; indeed, when the miliary eruption disappears, the epidermis dries and seperates in scales, which never happens with the petechiæ, which are moreover, more dangerous, and shew, more directly, the putrid character.

Petechiæ are of two very distinct kinds.

(1) Par. x, pag. 252.

The

The first is that which we observe in fevers that participate more of the inflammatory, than of the putrid character, it rather affects robust subjects; the eruption occurs at the height of the disease, or in its first period, previous to that of the coction; it seems to manifest itself in an increase of reaction, and to be influenced, either by a heating regimen, or by a spontaneous process of nature; it is accompanied by all the symptoms of energetic circulation.

This species of petechiæ, much less common than the following, and which generally demands blood-letting, was probably that which Sydenham had to treat in his colleague Morice, since he succeeded in the cure, by bleeding, and antiphlogistics (1). The celebrated De Haen speaks also of this species in many parts of his works. Stholl remarks of it (2): " The petechiæ of putrid or malignant
" fevers, should be well distinguished from
" those which the acute inflammatory fever
" presents, in which, at its highest pitch,
" the circulatory impulse seems to rupture
" the capillary extremeties, and thus to form

(1) Opera univers., p. 168.
(2) Rad. Med. t. 4 Hist. xxvij, pag. 275.

" petechial

" petechial spots, which cannot, by any means, " be termed malignant."

I once met this species, with my colleague M. van Lokeren, in an aged person, whose skin was bespread from head to foot, with innumerable large black petechiæ: he was readily cured of them by an anti-phlogistic treatment.

The second species of petechiæ is always symptomatic, for we only observe it during putrid or pestilential fevers, in which it often shews itself on one of the critical days: it is of this, that Diemerbroeck (1) says: " We " have constantly observed this eruption to be " symptomatic, and never critical, and, that " it always announces the sinking of nature." Murator (2) speaks of it in the same sense: " Buboes may be sometimes salutary; but " the anthrax and petechiæ, signs of a very " violent disease, generally hasten a fatal ter- " mination."

All that these authors have said of it, in

(1) De peste bredan. pag 73.
(2) Lud. aut Muratori, de Peste.

treating

treating of the plague, may be very well applied to the worse kind of putrid fever, which appears to be very nearly allied to this terrible scourge. Stholl, Boerhaave, Van Swieten, Sydenham, De Haen himself (1), have pronounced a similar opinion on this species of petechiæ, and Cullen recognised it, in his *typhus gravior*, as the most prominent symptom of degeneration. As, in this dissertation, we treat of the putrid or nervoso-putrid fevers, we may conclude from analogy, that petechiæ, being a proof of the decline of the vital powers, and of degeneration of the humours, as well as of extreme atony of the capillary mouths, can never indicate blood-letting, so much the less, as that eruption appears but rarely, or rather never, in these fevers, without being accompanied by every symptom of a fatal debility.

(1) L. c. p. viij, cap. xxi.

§ XVII.

§ XVII.

Of Tympanites, and of Tension of the Hypochondria.

METEORISMUS, which consists in the flatulent and preternatural swelling of a part, or the whole of the abdomen, and which frequently takes place in putrid and malignant fevers, may arise from causes very different, and consequently may be considered to form as many distinct species, of which the principal are: 1st. The saburral meteorism, resulting from a morbid heat *(foyer)* in the primæ viæ. It forms a pretty frequent complication of meningo-gastric, pituitous, and bilious fevers, whether simple or putrid. The existence of this heat is easily known from its peculiar symptoms; which are, depraved taste, dirty covering of the tongue, teeth and interior of the mouth, loss of appetite, fœtid eructation, a sensation of tension and fulness in the epigastrium, trembling of the under lip, sensibility of the abdomen, which is more or less painful to the touch, particular uneasiness in the loins,

irregular

irregular stools, sometimes scanty, sometimes abundant and fœtid, &c.

The concurrence of a greater or less number of those symptoms, sufficiently point out this species, which, of itself, never bears bleeding.

2nd. In patients severely affected with an ataxic, malignant or hemitritean fever, and who are in a state of drowsiness or delirium, there often occurs, suddenly, a considerable inflation of the intestines, with suppression of urine, without evident symptoms of the foregoing species, nor of meteorism from inflammation, which we will presently speak of. The cause of this phenomenon appearing to be the sudden diminution of irritability in the muscular coat of the intestines, and of the bladder, all sanguineous evacuation, in this case, is absolutely hurtful.

3rd. Tympanites, again, arises from the untimely suppression of the diarrhea, which frequently accompanies the nervoso-gastric, or putrid fevers. Although this species, which will be easily recognised, by the previous circumstances having shewn, that that diarrhea was salutary, may be generally accompanied by

anxiety

anxiety, it yet forbids our having recourse to blood-letting.

4th. In the course of putrid fever, it is not uncommon, subsequent to a state of continued delirium, comatose or furious, the tongue being chopped, dry, crusted, the pulse at first a little hard, afterwards weak, and the belly very sensible to the touch, to see the patient suddenly affected with tympanites. This phenomenon, owing to gangrene, may at first give rise to doubt; but is very soon cleared up by the development of the other signs of that fatal termination, such as coldness of the extremities, great weakness of the pulse, extinction of vision, &c. The following is the aphorism of Hippocrates on this subject: "It is a bad "sign, when coldness of the extremeties succeed to a pain towards the abdominal region."

The fifth species of meteorism, and the most important, especially with respect to the indication of blood-letting in putrid fevers, is the *inflammatory*. It appears to depend upon a secondary inflammation of the intestines, caused by a particular determination towards those

organs. Baillou (1) has described it under the name of *flatulent enteritis*, and asserts, that it is a very frequent complication of putrid and malignant fevers. If this meteorism shews itself at a very advanced period, or towards the decline of the disease, it must be referred to the preceding species, and never admits of a general bleeding: we might, at most, hazard a topical depletion by leeches from the anus, if the patient be yet possessed of a certain degree of vigour. But if it takes place during the development, or at the height of the disease, if it accompanies symptoms of general increased action, and that an acute pain, remains fixed in a part resisting the touch, if vomiting supervenes, if there is constipation, if the strength is good, and the pulse is found a little hard, if there is a more or less burning heat, thirst, a white dry tongue, and high coloured urine, then it will be necesssary to have recourse to blood-letting, as well general as local.

I have said, if the pulse is *a little* hard, because the hardness here falls far short of being proportioned always to the violence of the inflammation: " There is no affection," says

(1) Observ. libr. ij.

Stholl.

Stholl, "where the pulse may be so deceitful "as in this case. We very often find it per- "fectly soft, weak, and as if vanishing from "under the finger, whilst the inflammation ex- "ercises on the intestines, the most fatal ra- "vages. It is this insidious appearance of the "pulse, which so often misleads inattentive "practitioners; believing the vital powers "diminished, whenever they find a weak pulse, "they exasperate, they irritate the disease, by "a stomachic and incendiary treatment, whilst "the only hope is in antiphlogistics fully ad- "ministered. Exasperated by a method so "perverse, the inflammation rapidly runs its "course, quickly induces the extinction of the "vital action, in the part secondarily affected, "and terminates in gangrene." (1)

This description of the various kinds of tympanites, sufficiently shews, that the last alone calls for blood-letting.

Hippocrates paid great attention to the state of the hypochondria. In fact, they furnish some symptoms which it is well to recollect. When they are swelled in a soft and equal man-

(1) Eyerel. in Stholl dissert, p. 106 and 107.

ner, and when they are not painful, we may rest satisfied about inflammation of the subjacent parts; but if we find them very tense, with violent pain, we may expect a serious affection of these viscera, a dangerous suppuration, or gangrene; if, in this last case, no other symptoms oppose it, blood-letting is, without doubt, indicated.

Tension of both hypochondria at once, was ranked by the Father of Medicine, among the signs of a critical nasal hæmorrhage, especially if, at the same time, the other symptoms of determination to the head, which we have elsewhere sufficiently pointed out, present themselves; and he does not forget to warn us that, to be such, that tension must be exempt from pain and inflammation. It is evident that, in the hope of an approaching crisis, we must abstain from all means which might disturb this salutary evacuation.

Blood-letting is again contra-indicated by the flatulent tumefaction of the hypochondria: this generally appears with other symptoms of debility: it arises from elastic matters, produced by putrid ingesta remaining in the primæ viæ, and from great atony of the stomach

and

and intestines: it is from thence, that unequal distention of the epigastrium, and of the whole abdomen, which we frequently observe in dying people, proceeds.

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§. XVIII.

Of the Symptoms produced by the Complication with Worms.

ALTHOUGH worms may have been found in almost every part of the human body, they are situated however, most commonly, in the stomach and intestines. (1)

It is from this organic system, so eminently sensible as to reflect its irradiations to every other, that the irritation produced by its restless inhabitants (*hôtes incommodes*) is easily propagated through the whole state. Indeed

(1) On peut consulter à ce serjet. Van Doeveren, de verm. intest. pag. 3.

there

there is hardly any disease which authors may not have remarked, caused by the verminous complication. I may cite, for example, vertigo, delirium, catalepsy, tetanus, general convulsions, syncope, aphony, loss of sight, and even sudden death (1). We need not then be astonished, if, from this two-fold cause, we observe such irregularity in putrid and nervous fevers, above all, in those bilioso-putrid, where this complication often perfectly resembles inflammation, or produces, on other occasions, obstinate syncope (2).

It seems useless to accumulate many similar facts, since there is no practitioner, who may not have had opportunities of witnessing numerous disorders occasioned by worms. However, there is considerable difficulty in recognising, in putrid fevers, the existence of this complication, concerning which, we find nothing like certain rules, and the symptoms of which are commonly so masked, and confounded with those of the principal disease,

(1) Voyez Van den Bosch, Hist. constit. epid. verm. c. 4.

(2) Schenk, obs. med, lib. 3, obs. 2, pag. 333.

and

and induce phenomena so singular, that the clearest eye cannot easily discover them.

As it is, however, of the last importance, to establish a diagnostic as exact as possible, respecting the serious affection of a vital organ, as for example, pleurisy, peripneumony, or violent head-ach, which may arise from the irritation of worms in the primæ viæ ; I have here attempted to collect the most certain features concerning this embarrassing case.

1st. When this complication exists, the head-ach, which in a great measure depends upon it, yields neither to evacuants nor to topical applications ; on the contrary, it is often exasperated by their use. This weighty, and sometimes insupportable head-ach persists, whilst, at the same time, none of the true symptoms of particular determination to the head are observed.

2nd. The tongue is frequently covered with a brownish, and as if somewhat fattish crust, and the breath has a particular acido-putrid odour. According to Van den Bosch, this takes place especially in the putrido-gastric

fevers ;

fevers: I have often remarked the tongue dry and foul in the nervoso-putrid fevers.

When the irritation from worms resembles pleurisy or peripneumony, the pain of the side is more vague and less constant, and is frequently accompanied by a dry cough: however, we do not find with it, the symptoms peculiar to inflammation; on the contrary, the pulse is weakly, and often as if vanishing; its pulsations are intermitting and unequal (1): we observe, at the same time, cardialgia, or a præcordial anxiety, which increases towards evening. The presence of worms becomes still less equivocal, if the pain now pervades the side, now the belly; if there results from it an increase of the head-ach; if the eyes become red, hollow, weeping, &c.

4th. Those symptoms are alleviated, by the evacuation of excrementitious matter of an altered character, full of clots and dregs; whilst they are aggravated by constipation.

5th. The perspirations in the verminous

(1) Voyez Nov. rar. obs. etc. auctore I. Ni-hell, pag 29, 36, 64, 131, 135.

complication, have a peculiar acido-putrid odour, and are interrupted by irregular shiverings.

6th. The urine is muddy, its colour and consistence are exceedingly variable: sometimes it appears crude, sometimes it deposits much sediment, the colour of which, frequently inclines to white or yellow; very frequently also, the appearance of the urine throws no light whatever on this affection.

7th. That which may most elucidate, is the observation of the epidemical constitution, sometimes generally *verminous*, which frequently supervenes in rainy and warm seasons.

8th. Finally, independent of those symptoms, which are more or less prominent in putrid fevers, we will take into consideration, the general signs of worms, which are more especially remarkable in children, such as dilatation of the pupil, the state of the nostrils, symptoms sufficiently known to practitioners.

Notwithstanding all this, the diagnostic, and consequently the therapeutic for the verminous

minous complication in continued fevers, is still so difficult, that the most able men have been misled. To give an example of it, I shall here relate a fact, which Van den Bosch (1) seems to have introduced in his work, for the express purpose of shewing, to what a degree such a practitioner as de Haen may be thereby decieved; the following is the detail.—

A woman, twenty-six years of age, was attacked with a very acute putrid fever, which developed itself by a sudden and violent pain in the head and chest, immediately followed by petechiæ. It appears, from the account of de Haen himself, (2) that *after the last bleeding* which he had judged necessary, the sleep was more disturbed, that the patient was in a state of tranquil delirium, and that she suffered continual nausea; these symptoms made him suspect an approaching critical perturbation, when a copious perspiration, which occurred immediately afterwards, brought some relief. However, on the eighth, ninth and tenth days, the patient had vomitings; on the ninth, the urine deposited a copious sediment; on the

(1) Hist. Const. epid. verm. pag. 58 et seq.
(2) Rat. Med. t. viij. pag. 4 et 6.

eleventh,

eleventh, there were bilious and well digested stools; on the thirteenth, the petechiæ had almost disappeared.

All these evacuations were not sufficient to terminate the disease, on the fifteenth day there appeared a fever, the heat attending which, mounted to 104 of Fahrenheit; on the morning of the sixteenth, to 106, and in the evening to 109; the vomiting persisted, the bowels were constipated, and the urine of a brick colour; the seventeenth day, cephalalgia, yellowish vomitings, four stools, also yellowish: the disease still undecided. The twenty-fifth and following days, cholic and frequent vomitings. De Haen, remarking at length, that the pupils were much dilated, and particularly that previous to her disease, the patient had twice voided worms by the mouth, suspected a verminous complication; anthelminti's, immediately administed, produced an evacuation of lumbrices, and by the thirty-fourth day, the patient was completely reestablished.

Van den Bosch (1) concluded, from this observation, that the worms were the efficient

(1) Lib. cit. p. 60, 63.

cause

cause of all these morbific phenomena; that the obstinacy of the head-ach, the nausea, the vomiting, the crude stools, now hard, now fluid, as well as the muddy urine, plainly shewed that the disorders caused by the presence of worms in the intestines, had been the only obstacles to a salutary crisis, and, that in such a case, we cannot hope for any assistance either from time, or blood-letting.

§ XIX.

Of the Inspection of the Urine.

ALTHOUGH we are as little disposed to adopt the ideas of some antient and modern quacks, who see every thing in the urine, as we are far removed from the opinion of the stoical sceptics of our day, who will not even examine it, we think, however, that this excretion frequently affords the most certain signs of the changes which the vital action undergoes,

goes, as well as of the organic lesions which affect the parts, destined to the elaboration and emission of this excrementitious fluid.

These signs are so manifest in febrile diseases, that he who will carefully observe the phenomena which the urine presents, may thence deduce many useful indications.

We proceed in attempting to associate the different signs which, in intermittent, putrid or nervous fevers, the inspection of the urine may furnish, for or against the indication of blood-letting

In the putrid synochus, when the fever is perfectly formed, the urine is somewhat of a redder colour than in its natural state, and remains thus for some days, without precipitation, or else it deposits, from the first, a reddish, whitish, or yellowish sediment. In a more advanced stage, it is muddy, without sediment, and is very much like mare's urine.

As long as it is red, or of a reddish brown, or of a flame colour, and without sediment, the urine does not contra-indicate blood-letting; this symptom concurs rather to prove the energy

energy of the circulation, and tone of the vessels. I solicit the earnest attention of young practitioners to the following precept of Stholl: "When the urine is red, and remarkably "coloured, be careful not to prescribe the bark, "whether in continued or intermittent fevers: "the inconsiderate employment of this remedy "produces, in acute fevers, pernicious inflam- "mations, and changes intermittent into seri- "ous continued fever, dangerous, and of long "duration. If, with such urine, there is dryness "of the tongue, general burning heat, ardor in "the hypochondria, we should rather have re- "course to copious, and even repeated blood- "letting, to prevent delirium, cephalalgia, or "other inflammatory or spasmodic affections." (1)

It is not credible how much this judicious rule is often abused, especially in putrid fevers, which ape the intermittents, of which we have already given some examples.

In general, the less evident the remission of the fever, the clearer the urine; so that when a remittent or intermittent fever becomes con-

(1) Rat. Med. part 6. aph. § 60.

tinued,

tinued, the urine no longer deposits a sediment, even after a long rest. If, on the contrary, after having been limpid, it shews a whitish sediment, although in small quantity, we may, according to Cullen, attribute this change to a relaxation of the spasm, and expect to witness the fever pass into the intermittent type. Then, if no other urgent indication renders bleeding necessary, this febrile intermission, and muddy urine, may contra-indicate it; for, when a putrid continued fever is converted into an intermittent, it is necessary to œconomise, with extreme care, the remaining vital powers, requisite for the removal of the morbific principle.

The turbid urine without deposit, of the synochus, which shews atony of the organs, and an advanced degeneration, absolutely forbids all sanguineous depletion. (1)

The urine which, from the commencement of putrid fevers, appears pale, aqueous and transparent, and which remains so during several days, whilst, at the same time, the circulation appears rather raised than otherwise, is,

(1) Hippocrat. epid. chart. t. vii, p. 197. 8 tom. iv. p. 301

with

with reason, regarded by Hippocrates as very fatal; and he asserts, that in frenzy, it is commonly so. Galen goes farther, and affirms, that he never saw a frenzy cured, in which the urine presented this character; and he elsewhere says: "If, in ardent fever, the urine appears pale and "thin, it foretels frenzy; if the frenzy is "present, it announces death." Here is yet a precept of the Coan Sage, which relates to our object: "It is necessary to purge those, in whom "the urine is thick and cloudy at the com-"mencement, if there is otherwise no objection: "we will not purge, if, in the beginning, it be "limpid." This rule, according to Stholl, is excellent, and ought to be specially followed in acute fevers; for he says, in the former case, all is crude at the commencement, ill digested, and the urine is consequently maigre and clear. (1) When, therefore, we find this appearance at the commencement, or in the first period of a putrid synochus, and that, at the same time, we observe signs of great re-action, and determination to a vital organ, a bleeding may very well be indicated: if the urine, on the contrary, after having been muddy and thick for some time, and, at

(1) Rat. Med. part 6, § 738.

rather

rather an advanced period of the disease, suddenly becomes clear, it may be regarded, with the celebrated Boerhaave, as a preceding symptom of secondary convulsions, which, arising rather from a considerable disturbance of the nervous system, than from an inflammatory state, specially forbids the employment of sanguineous evacuation.

In the simple nervous, nervoso-putrid, or ataxic fevers, the urine generally continues a long time a little deep coloured; but it rarely affords any indication for, or against bleeding, however its quantity, colour or consistence may be otherwise modified.

We have already seen that, in intermittent fevers, the bright red urine, without sediment, shews their tendency to the continued form; the more these qualities are developed, the more, *cæteris paribus*, they require bleeding.

In a word, the principal characters of this excretion, which most contra-indicate blood-letting, are, all maigre and limpid urine, in an advanced stage of the disease; all muddy urine, without deposit; all blackish, leaden-coloured, or bloody urine, which appears so at

the

the decline of the disease, and which is regarded as the most portentous of all.

Although red-coloured urine, in general denotes augmentation of the vital powers, yet, in the putrido-gastric fevers, it sometimes affords only equivocal signs. I may be allowed to quote, on this head, a passage from Stholl (1) " The red, and very deep colour of the urine, is " not always a proof of inflammation. When " there occurs a mass of undigested matter in " the primæ viæ, we frequently find the urine is " high-coloured, in small quantity, very sti- " mulating, to a degree that the patient suffers " strangury: we must not at all suspect in- " flammation from the solitary sign of this " colour, and imprudently open a vein; for if, " with this appearance of the urine, gastric " symptoms are observed, such as the mucous " and yellowish coating of the tongue, the " clamminess of the teeth, the bitter or dis- " agreeable taste; if the patient was incom- " moded with sickening bitter, acid, or even " sweetish eructations; if he felt a heavy pain " at the stomach, or a tension of the hypochon- " dria; if, together with these, there were

(1) Rat. med. part 6, de Meth. exam. Œgrot. p. 281.

" fœtid

" fœtid night sweats; in all these cases, resol- " vents and evacuants are to be prescribed: but " when we find redness of the urine, with dry- " ness of the throat and tongue, with thirst, " with aridity of the skin, and elevation of the " pulse; then, without doubt, that colour of " the urine adds a certain weight to the indica- " tion of bleeding."

§ XX.

Of Secondary Inflammation in the Parotids, in the Groins, or in the Extremeties.

THE secondary inflammation which, in putrid and malignant fevers, &c. seizes upon a vital organ, is always mortal: that which, by a salutary reaction of nature, is repelled towards the surface, to the axillary glands, to the parotids, to the groins, or to the inferior extremeties, in the decline of the disease, and after an imperfect crisis, frequently turns out salutary, when, by a new effort, nature conducts those collec-

collections to suppuration: if, on the contrary, she has not the power necessary to complete her suppurative process, that effort becomes not only useless, but hurtful.

This prognostic is confirmed by many authors of the first order. "When, in ardent "fever, the inflamed parotids do not arrive "at suppuration, it is a mortal sign." (Boerhaave) (1).

"Abscess of the parotids, is the sign of a "critical collection." (Van Swietèn) (2)

"If the parotids do not at all suppurate in "the ardent fever, the patient rarely escapes." (Hippocrates) (3); and in another place: "The "collection in the parotids is of bad omen, "when it is insensibly dissipated without sup-"purating." (4)

(1) Aphor. de Cogn. et cur. Morb., Aph. 741.

(2) Comment. in Aphor. Boerh. t. ij, Aphor. 741, p. 877.

(3) Coac præd., No. 1139.

(4) Prorrhet, l. 1, in fine. On peut consulter encore à ce sujet Hippocrat. epid. libr. 8; Pringle, t. ij, pag. 66; R. Mead, Monit. et præc. Med. de febr. cum exanthem.

It is of importance to remark here, that I have rarely observed such secondary inflammatory affections of the parotids, in fevers purely nervous.

Two principal circumstances prevent the favourable termination of those collections. The first is, the too great previous diminution of the powers of life: in this case, the tumour is more slowly developed; it is red, and more painful; the vital energy remains depressed, and exhausted nature sinks under her last effort. The second depends upon a sudden and excessive reaction: in this case, the parotids suddenly swell, and, in a very short time, become exceedingly enlarged; but this transfer of blood, much too violent, produces, at the same time, a comatose affection, or a great difficulty of respiration. If this circumstance occurs with the general symptoms of increased arterial action, a bleeding, however doubtful its success might be for other reasons, may, and even must be practised, since otherwise, dissolution is certain, and at hand.

When, on the contrary, the parotids swell by degrees, the strength holds good, and neither drowsiness nor anxiety is observed, we may shortly

shortly expect either a favourable resolution, or a suppuration establishing the equilibrium. Far from instituting, in this case, an incautious depletion, which might induce a fatal metastasis, we will rather solicit and maintain the suppuration by every mean within our reach.

We have sketched the principal symptoms, which, with respect to blood-letting in putrid and malignant fevers, offer real difficulties, and we have attempted to determine, from authority and from experience, what the least equivocal symptoms are, which could elucidate the employment of this remedy. I now throw together, under one point of view, the most important precepts found dispersed in this little work, and which I venture to offer, as the most useful, and the least contestible results, of whatever has been most carefully observed on this point of doctrine.

SECTION FOURTH.

Some Practical Inferences from this Dissertation.

1st. INTERMITTENT fevers in general, do not admit of blood-letting as a remedy for the fever itself; it is there only indicated by concomitant and accessory circumstances.

2nd. Those circumstances are more rarely met with, and should also be more urgent, in paludal intermittent fevers, considering their special character of debility: in those which are owing to quite another cause than marsh miasms, we may bleed more frequently and less scrupulously.

3rd. There is no intermittent fever, in which blood-letting is more rarely admissible, than in the paludal quartan.

4th. We may repeat blood-letting with more safety in the intermittent, than in the putrid or nervous fevers.

5th. We

5th. We should much more rarely have recourse to sanguineous evacuation in the nervous malignant fevers, which are announced by a considerable depression of the animal, vital and natural powers, than in the putrid synochus.

6th. Blood-letting should by no means be practised in that synochus, for the fever itself.

7th. It is expedient only in the inflammatory stage, that is to say, the first days of the disease, when the febrile heat is very perceptible.

8th. We should rarely repeat bleeding in this fever, and still less, take much blood at once.

9th. If, in the putrid synochus, the symptoms are still urgent after the first bleeding, we must, before proceeding to a second, attempt to moderate, by the use of soothing and revulsive remedies, the inflammatory symptoms which subsist in any important viscus.

10th. In fevers purely nervous, we must, previous to blood-letting, examine the whole of the accompanying symptoms. We will then direct a scrupulous attention to all the general signs which can confirm the diagnostic, above all, to the pulse and the degree of heat: however, the hard, small, and very frequent pulse, is often a very deceitful index. Neither must we trust, during the progress of the disease, to the augmentation of a biting heat, which penetrates the finger applied to the skin; on the contrary, the marked and less frequent pulse, is a sign of the complication of phlegmasia with putridity.

11th. In the ataxic or malignant fevers, we should be determined on the measure of blood-letting, especially by the local affections of vital parts; for it is always the remedy of the symptom, and by no means of the proximate cause.

12th. As there is no vital part more frequently affected in fevers than the lungs, it is essential to pay the greatest attention to the state of the respiration.

13th. We ought, *cæteris paribus*, to bleed more

more boldly when the eyes are inflamed in nervous and putrid fevers, than when they are exempt from it, and that, although other signs may indicate that the head is affected.

14th. The symptoms which indicate a repetition of blood-letting, should be taken principally from the dread of an impending metastasis to a vital part, also, from the vibrating and full state of the pulse, when the strength is not greatly exhausted.

15th. When, in the progress of a fever, all the symptoms increase, or others more serious supervene, there is often reason to expect a critical change; we ought not then, consequently, to be precipitate in bleeding, especially in the low nervous fever, where changes for the better usually take place slowly, and without much agitation.

16th. The nasal hæmorrhage, so frequent in the putrid synochus, and even in the nervous fevers, may be salutary or critical in young subjects, of sanguine temperament and full condition. It is so again, in cases of suppressed natural or habitual evacuations, particularly in spring, winter, and whenever it relieves the patient.

patient. It is, on the contrary, symptomatic, when it is produced at the commencement of the disease by debility, or when it supervenes in a very advanced stage, and accompanies serious symptoms, insensibility, a creeping pulse, convulsions, petechiæ, or other symptoms of debility.

PART IV.

Practical Observations and Facts.

If medicine is essentially a science of observation, it thence results, that the study of particular cases, handed down by enlightened and credible practitioners, is the most fertile source from which the young physician can draw positive information, and prepare himself to contribute his own observations to the records of experience. Persuaded that a single fact proves more to the eyes of a judicious individual, than many pages of abstract reasoning, more or less plausible, I have attempted to support the doctrine proposed in this little work, by some histories of diseases, collected, partly from the registries of the civil hospital at Ghent, and partly from my daily notes. I have rather chosen those, the dissection of which, I could at the same time report, as being more interesting and more instructive. It will not be surprising then if the greatest part of them offer unfortunate results; let it be re-

collected

collected, that they are chosen from among hundreds, whose issue has been favourble, and let us cease to calumniate an art the most useful, although perhaps the most abused: if it does not always accomplish its object, if it is not carried to perfection, it is because its limits are those of human intelligence.

SECTION FIRST.

Intermittent Fevers.

THE first series of facts, tends to demonstrate how useful, sometimes even how indispensible bleeding is in the intermittent fever, not owing to marsh miasm, when, arising in spring, they partake of the inflammatory character, which, in that season, more or less generally prevails, or when their relapse has been occasioned by this epidemical influence; and we shall see how far the neglect of a heroic remedy in these cases, is followed by destructive

tive consequences. It tends to prove to us that blood-letting is yet necessary, when the suppression of an habitual evacuation, or the sickly disposition of an important organ, complicates the proximate cause; that it is also indicated, when an intermittent fever is masked under the form of an acute phlegmasia. We shall further observe, how manifest the dropsical diathesis, common to all intermittent fevers, becomes, when the subject is previously debilitated by relapsès, or antecedent putrid or malignant diseases. Another example will prove to us, that a fever which assumes a more rapid progress, also induces sooner, this unfortunate termination. We shall see, lastly, how readily dropsy is formed in paludal fevers, especially in aged people.

FINIS.

ERRATA.

Page 110, *line* 9 *from bottom, for* " however" *read* " here, though inapplicable."

246, *line* 6, *for* "Anthelmintis" *read* "Anthelmintics."